THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 158, NO. 11 — CHICAGO, ILLINOIS — JULY 16, 1955

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MITRAL COMMISSUROTOMY IN RELATION TO PREGNANCY

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Heart disease rapidly is becoming one of the most important complications of pregnancy, since maternal mortality from hemorrhage, toxemia, and infection is being reduced from year to year. Organic heart disease, usually rheumatic, complicates 1 to 2% of all pregnancies.[1] It is a serious complication in that it accounts for about 25% of all maternal deaths.[2] Any new addition to the therapeutic resources designed to reduce the morbidity and mortality of mother and child in the pregnancy complicated by heart disease should therefore be carefully considered. Mitral commissurotomy, already proved to be a valuable adjunct in the therapy of mitral stenosis in the nonpregnant patient, now gives promise of decreasing the morbidity and mortality in the pregnant patient. Our experience and that of others [3] with commissurotomy during pregnancy is as yet small, but the results are worthy of consideration.

Mitral stenosis is especially common in young women of childbearing age. Of our first 500 commissurotomies, 64.4% were in women and 58.7% of these were in patients under 40 years of age. Many dated their first cardiac difficulty from their first pregnancy. Even when pregnancy and delivery were successfully surmounted without operative help, the patient often was left with increased symptoms and disability, marking the beginning of a steady deterioration.[3a] Mitral stenosis in pregnancy not only has great medical importance but has equal significance from the psychological, sociologic, and economic aspects, deleteriously affecting the home, the family, and the marriage. Therapeutic abortion and/or sterilization of the wife is not a satisfactory solution and indeed may be the cause of the dissolution of the marriage. The desire to have children has frequently motivated women to request surgical intervention. The problem of therapy in the pregnant woman with mitral stenosis, therefore, is of far-reaching importance.

Pregnancy does not seem to hasten or adversely affect the pathological changes of rheumatic disease in the heart [4]; however, it does throw a greatly increased burden upon the heart so that an individual, formerly well compensated, has a decreased margin of cardiac reserve and may become decompensated. This increased cardiac load in pregnancy is due to the following physiological factors: (1) more tissue to be supplied with blood, (2) more oxygen necessary for locomotion because of the greater load carried, (3) increased blood volume (45% above normal at the 34th week), (4) sodium and, thus, fluid retention, (5) increased oxygen consumption (basal metabolic rate 10 to 20% above normal), and (6) arteriovenous communications in the placenta. The cardiac output rises slowly from the 12th to the 24th week to meet these demands and increases rapidly from the 24th to the 32nd week, so that by the 32nd week, it is 40 to 50% above normal. This increased output is achieved both by a more rapid heart rate and a larger stroke volume. Thus in all pregnant women there is an encroachment on cardiac reserve.[5] After the 32nd to 34th week there is a gradual decrease in cardiac output and hypervolemia. The incidence of heart failure, therefore, steadily increases in pregnancy up to the 32nd week, but primary failure seldom occurs after that time.[6]

Rheumatic heart disease is responsible for 90 to 95% of all organic cardiac lesions in pregnancy. Mitral stenosis, with or without other valvular lesions,[1] is the com-

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Dr. John D. Corbit Jr., Director, Obstetrical and Gynecological Division, Presbyterian Hospital, Philadelphia, helped in the preparation of this paper.

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mon offender, and its most dangerous complication is that of pulmonary edema. The major effect of mitral commissurotomy is the reduction of pulmonary vascular hypertension. This effect has been observed in all reported cases of commissurotomy during pregnancy, as evidenced by the disappearance of the signs and symptoms of pulmonary congestion.

During the past 15 years therapeutic abortions in the average teaching hospital have varied from one abortion per 166 deliveries to one abortion per 357 deliveries.[7] Of these therapeutic abortions, cardiac cases account for 15 to 20% of the total. Since the number of therapeutic abortions for tuberculosis has decreased, while the number for cardiac disease has remained nearly the same, this percentage in recent years has doubled in proportion, making it 30 to 40% of all cases. Approximately 85% of these abortions for cardiac disease were in patients with pure mitral stenosis or combined lesions due to rheumatic infection.[7] It would seem, therefore, that the indication for therapeutic abortion in the pregnant woman with mitral stenosis can be greatly modified since the advent of mitral commissurotomy. There is now a more optimistic outlook for such patients in that many may continue their pregnancies while exposing themselves to minimal risk. Mitral commissurotomy also may offer new hope to the childless couple who have feared pregnancy because of rheumatic valvular disease in the wife.

The diagnosis of organic heart disease in pregnancy is at times difficult to make, and, specifically, the diagnosis of mitral stenosis may be especially difficult. Pregnancy causes certain physiological changes that mimic organic heart disease.[1] There is normally an increase in the heart rate in the pregnant state. Many patients have ankle edema due to venous congestion in the lower extremities. Patients with no cardiac disease may have breathlessness, orthopnea, and occasional attacks of nocturnal dyspnea. Functional murmurs are heard in 50 to 70% of all pregnant women. There may be apparent cardiac enlargement due to the elevation of the diaphragm, increasing the transverse diameter of the heart in relation to the diameter of the thoracic cage. The pulmonary conus may also be accentuated secondary to the lordotic posture assumed by the patient.[8] The left cardiac border, bulging in its upper segment, may cause the cardiac silhouette to resemble the configuration seen in mitral valvular disease. At times there is associated with this change retrodisplacement of the barium-filled esophagus in the right anterior oblique view suggesting an enlarged left atrium.[9] There may be increased haziness of the lung bases mimicking pulmonary congestion. An astute cardiologist is often needed to make the differentiation between organic disease and the normal physiological changes of pregnancy. One valuable aid may be the circulation time, which decreases during pregnancy uncomplicated by heart disease.

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To the present the prognosis in mitral stenosis complicating pregnancy has been based largely upon the clinical estimation of cardiac reserve as influenced by age, heart size, history of congestive failure, and the presence, or absence, of auricular fibrillation. The degree of cardiac reserve was arbitrarily classified in stages 1 to 4 (New York Heart Association classification) according to the amount of activity that could be undertaken with or without signs of dyspnea and fatigue. Patients in activity classes 3 and 4 over 35 years of age, with enlargement of the heart, history of previous cardiac failure, or in auricular fibrillation were considered as candidates for therapeutic abortion and sterilization. Those of activity classes 1 and 2 were also considered if they had one or more of the above complicating factors. To these factors should now be added the valvular findings at cardiac exploration, which ofttimes may offer prognostic information of more accurate and pertinent import, when such an irreversible step as abortion and sterilization is being considered. Several patients in our series, having undergone successful surgery in which very favorable valves were restored to a high degree of function, had needlessly, by present concepts, been sterilized prior to commissurotomy. Their lot is not an enviable one, as each is a young woman now otherwise perfectly capable of childbearing. One patient is so distressed that she is strenuously exploring ways and means of becoming pregnant by submitting to reconstructive tubal surgery.

Those findings that indicate a truly poor prognosis in mitral stenosis are a rigid immobile valve, moderate to marked associated regurgitation, and a marked degree of cardiac enlargement that at times can be more accurately appraised by direct vision than by roentgenographic means. If the valve is found to be pliable, if the commissures divide easily with the production of little or no regurgitation, and if a good early result has been obtained, the patient may then continue pregnancy with reasonable assurance and possibly look forward to additional children. Less favorable valvular and myocardial findings would tend to suggest that avoidance of further pregnancy should be recommended, even though a technically successful commissurotomy was accomplished. Modern cardiology is no longer limited to clinical, electrocardiographic, roentgenologic, and laboratory examinations but should include, at least in symptomatic mitral stenosis, exploratory and reconstructive valvular surgery.

In the first 500 consecutive commissurotomies performed by two of us (R. P. G. and T. J. O.), 5 (1%) were carried out during pregnancy. Because of the early status of commissurotomy in pregnancy, it seems worth while to report these cases in order to give encouragement to others faced with the decision for or against surgery. One patient was operated on at one month of gestation, two at six weeks, one at three months, and one at six and one-half months, (table 1). According to our present criteria, the latter patient probably should have been operated on earlier or not at all. The patient had undergone five previous pregnancies without undue difficulty but experienced marked dyspnea and frank pulmonary edema with the sixth. Her relief was remarkable after commissurotomy at six and one-half months' gestation, and she delivered without difficulty a premature

healthy infant (case 1). A second patient, who had a full-term pregnancy 16 years ago, developed rather severe orthopnea and pulmonary congestion subsequently, with marked aggravation in the first trimester of her recent pregnancy. She was subjected to commissurotomy at three months and has since continued to term and delivered without difficulty (case 2). The third patient has had no cardiac symptoms since her commissurotomy, which was performed at one month, and has required no cardiac medication despite caring for her two children (case 3). A fourth patient had a spontaneous abortion at the 12th week of gestation, just 6 weeks after commissurotomy (case 4). The fifth patient had cardiac failure with her previous two pregnancies and had had increasing cardiac symptoms since the delivery of her second child. She is now in her fifth month of pregnancy and, without cardiac symptoms following commissurotomy at her sixth week of pregnancy (case 5), is caring for her home and her two children. All of these patients withstood the operation well, and all five have obtained marked functional improvement.

REPORT OF CASES

CASE 1.—A 26-year-old white housewife was admitted to the hospital in July, 1953, when six and a half months pregnant. She gave a history of rheumatic fever at 5 years of age and of the baby, and she eats a full diet. Immediately postoperatively, a grade 2 mitral diastolic murmur and a grade 1 systolic murmur along the left sternal border were heard. No murmurs are now present. Follow-up examinations have revealed no evidence of cardiac decompensation.

CASE 2.—A 37-year-old white woman was admitted to the hospital in September, 1952, when three and a half months pregnant. She gave a history of rheumatic fever at 12 years of age, with recurrences until she was 17. She remained in good health from the age of 17 to 27, at which time she developed easy fatigability, dyspnea on exertion, and tachycardia. The dyspnea progressed during succeeding years, until, on admission, she had orthopnea with use of three pillows and could not climb one flight of stairs. There was no history of hemoptysis or emboli. She had taken digitalis for 10 years and had received mercurials from time to time during this period. The last menstrual period was June 17, 1952. The patient was gravida 3, para 1. She had had a spontaneous abortion 18 years previously, and the first child was born without difficulty 16 years before she was seen by us. The principal difficulty during the present pregnancy was the increasing dyspnea. The cardiac findings revealed a grade 2 harsh apical diastolic murmur, fine basilar rales, and a uterus the size of a three and a half month pregnancy. The liver was not enlarged, and there was no ankle edema. The heart x-rays showed a large right ventricle, large left atrium, and a prominent pulmonary artery. The electrocardiogram demonstrated right axis deviation and high P waves. Mitral commissurotomy was performed by one of us (R. P. G.) on Sept. 25, 1952. Exploration of the valve revealed the entire valve ring to be contracted by 50%. The leaflets were of the consistency of shoe leather but retained some pliability. The

TABLE 1.—*Commissurotomy During Pregnancy*

Case No.	Date of Commissurotomy	Age at Commissurotomy, Yr.	No. of Previous Pregnancies	Failure with Previous Pregnancies	Length of Gestation, Mo.	Failure Before Commissurotomy	Failure After Commissurotomy	Delivery	Follow-Up
1	7/8/53	26	5	Yes	6½	Yes	No	Normal premature infant	All housework
2	9/25/52	37	1	No	3	Mild	No	Normal full-term infant	All housework
3	11/20/53	30	1	No	1	Mild	No	Normal full-term infant	All housework
4	1/24/53	24	3	Yes	1½	No	No	Spontaneous abortion 6 wk. after commissurotomy	All housework
5	3/5/54	31	2	Yes	1½	Yes	No	Not yet delivered	All housework

another severe attack at 10. She had five previous pregnancies without difficulty except for the last, during which she developed marked dyspnea with moderate exertion. At three months in the present pregnancy, the patient had to discontinue her routine housework because of fatigue and shortness of breath. By the fourth month she developed paroxysmal dyspnea, which occurred nightly, at times two to three times a night. At the time of admission she was orthopneic and could not walk across the room without shortness of breath. The patient was receiving digitalis. There was no history of hemoptysis, embolic phenomenon, or peripheral edema. The cardiac findings on admission revealed a grade 3 mitral diastolic rumble, with presystolic accentuation, a snapping mitral first sound, and a loud, sharp pulmonic second sound. There were fine basilar rales in the lungs. The liver and spleen were not palpable, and there was no ankle edema. The cardiac x-rays showed enlargement of the right ventricle, left atrium, and pulmonary conus. The hilar vessels were prominent. The electrocardiogram showed a right axis deviation with normal sinus rhythm. Mitral commissurotomy was carried out by one of us (R. P. G.) on July 8, 1953. Exploration of the mitral valve revealed an orifice the size of a cigarette. The leaflets were of kid glove consistency but remained pliable. The cusp margins were rolled but contained no calcium. The anterolateral commissure was opened completely, producing a mitral orifice the size of two fingers. There was no regurgitation before or after the commissurotomy.

Postoperatively the patient did well and delivered a premature infant weighing 4 lb. 10½ oz. (2,112 gm.) on Aug. 25, 1953. Since that time she has taken care of all six children herself and has done all her own housework. She has some dyspnea when climbing stairs, but it usually occurs when she is carrying one of her children. She has taken no digitalis since the birth of cusp margins were thickened and rolled but contained no calcium. The orifice was of match head size and was opened to one and a half fingerbreadths. There was a slight amount of regurgitation after the commissurotomy.

Postoperatively there was a grade 1 apical systolic murmur and a split mitral first sound. The liver was palpable and tender for several days postoperatively. Her pregnancy continued uneventfully after the commissurotomy, and she delivered a full-term healthy infant in March, 1953. The patient now does all her own housework and cares for the child. She continues to take digitalis. On one follow-up examination, three months post partum, the liver area was tender. All succeeding follow-up examinations have revealed no signs of cardiac decompensation.

CASE 3.—A 30-year-old white housewife was admitted to the hospital in November, 1953, when one month pregnant. She gave a history of having scarlet fever as a child but no rheumatic fever or "growing pains." Her first child was born on July 1, 1950, and, until about four months after the birth of the baby, she had no signs or symptoms of heart disease. At that time she noted some shortness of breath on climbing stairs and easy fatigability, which she attributed to her increased duties in caring for the baby. In October, 1950, she went to see her physician for a common cold, and, during the course of the examination, she was told she had a heart murmur. When she was seen in the fall of 1953, the shortness of breath on exertion and easy fatigability had progressed; however, she had no ankle edema and had received no cardiac medication. She had one episode of hemoptysis about a week before admission to the hospital for commissurotomy. The cardiac findings on admission revealed a mitral diastolic rumble with presystolic accentuation. The pulmonic second sound was loud and sharp. There was no liver enlargement, no ankle edema, and no pulmonary rales.

By x-ray, the left atrium, right ventricle, and pulmonary artery were enlarged. The electrocardiogram showed a normal sinus rhythm and a right axis deviation.

Mitral commissurotomy was carried out by one of us (R. P. G.) on Nov. 20, 1953. The pulmonary artery, left atrium, and right ventricle were enlarged 1 to 2+. There was a diastolic thrill over the apex of the left ventricle. The mitral orifice was contracted to the size of a cigarette. The cusp margins were thickened and rolled but contained no calcium. The valve leaflets were thickened to the consistency of shoe leather but retained considerable pliability. The anterolateral commissure was opened to the myocardium, and the posteromedial commissure was opened 0.5 cm. The orifice now accommodated two fingers, and there was considerable restoration of valve motion. No regurgitation was produced, and the apical diastolic thrill over the left ventricle had disappeared. Postoperatively no murmurs were present, and there were no complications. The patient has been completely asymptomatic since surgery. A normal boy was born, with no maternal difficulty, on July 19, 1954. The patient requires no cardiac medication and continues asymptomatic despite a greatly enlarged sphere of activity.

CASE 4.—A 24-year-old white housewife was admitted to the hospital in January, 1953. She was six weeks pregnant. She stated that she was in good health until the age of 16, when she had fever and migratory polyarthralgia. She had several other similar episodes before she was 20. She had no cardiac symptoms, however, until her third pregnancy, when she developed marked dyspnea. She was given digitalis at that time and has taken it at irregular intervals since that time. She has had easy fatigability for the past two years. She used two pillows at night. There was no history of pedal edema, hemoptysis, or embolic episodes. The patient had three previous pregnancies at the age of 20, 21, and 23 years. The cardiac findings on admission revealed a grade 2 mitral diastolic rumble with presystolic accentuation and an apical diastolic thrill. The mitral first sound was accentuated 2+, and the pulmonic second sound was accentuated 1+ and split. There were no rales, no pedal edema, and the liver was not palpable. The x-rays of the heart showed the right ventricle, the left atrium, and the pulmonary artery to be enlarged. The electrocardiogram indicated a normal sinus rhythm and a normal axis deviation.

Mitral commissurotomy was performed by one of us (R. P. G.) on Jan. 24, 1953. At operation the left auricular appendage was found to be moderately enlarged, and the right ventricle, the pulmonary artery, and the left atrium were all enlarged 1+. The left ventricle was normal in size. The cusp margins were thickened and rolled but contained no calcium. The valve leaflets were of kid glove consistency and were pliable. The atrioventricular ring was decreased by 50% in size, and the valve orifice was contracted to the size of a cigarette. There was a grade 1 jet of regurgitation felt, and a grade 1 systolic thrill was felt over the wall of the left atrium. The anterolateral commissure was opened, and a small cut was made in the posteromedial commissure so that the valve orifice now admitted one and a half fingers. The regurgitation after commissurotomy remained about the same as before. Postoperatively there was no evidence of cardiac failure. The patient aborted spontaneously 6 weeks after the operation, or at the 12th week of gestation. She had two bouts of pleuropericarditic pain and fever after her spontaneous abortion. The patient now climbs stairs without tiring and cares for her three small children without aid. She takes digitalis daily.

CASE 5.—A 31-year-old white woman was admitted to the hospital in February, 1954, for mitral surgery, when six weeks pregnant. She had had chorea at 11 years of age and was subsequently told that her heart was enlarged. She limited her activities during childhood and remained asymptomatic until her first pregnancy. She was in the women's auxiliary of the Marine Corps for 17 months without cardiac difficulty. Her first pregnancy in 1950 was accompanied by shortness of breath and easy fatigability. Digitalis therapy was started, and, during the sixth month of her pregnancy, she required hospitalization for 10 days for the treatment of congestive heart failure. Her symptoms were then quiescent until her second pregnancy, in 1952, when she again required hospitalization for cardiac failure. Since the delivery of her second child she had noted progressive fatigue, dyspnea on exertion, and orthopnea with two or three pillows. She had been treated with mercurials, digitalis, and a low-salt diet. She had had no hemoptysis and no embolic phenomenon. The cardiac findings on admission revealed an apical presystolic crescendo-type cardiac murmur with a snapping first sound at the apex. The cardiac rhythm was normal. The lungs were clear. The liver was not enlarged, and there was no pedal edema. The cardiac x-rays showed the transverse diameter of the heart to be normal, but the esophagus was depressed by a large left atrium, and the left cardiac border was straightened. The electrocardiogram showed a normal sinus rhythm and digitalis effect.

TABLE 2.—*Pregnancy After Commissurotomy*

Case No.	Date of Commissurotomy	Age at Commissurotomy, Yr.	No. of Previous Pregnancies	Failure with Previous Pregnancies	No. of Mo. Delivery Occurred After Commissurotomy	Failure During Pregnancy	Delivery	Follow-Up
6	7/ 5/50	32	0	....	37	No	Normal	All activities
7	11/ 8/50	24	1	Yes	33	Yes	Normal (premature)	Moderate limitation
8	11/27/50	30	2	Yes	Therapeutic abortion, 3	No	.....	All activities
9	1/ 8/51	27	0	....	24	No	Normal	All activities
10	3/ 7/51	31	1	No	36	No	Heart failure post partum	All activities
11	4/17/52	36	1	Yes	12	No	Normal	All activities

Mitral commissurotomy was performed on March 2, 1954, by one of us (T. J. O.). A diastolic thrill was present over the apex of the heart. The right ventricle and pulmonary artery were enlarged 3+. The pulmonary veins and left atrium were enlarged 2+. There were no palpable thrombi in the auricular appendage. The left ventricle was not enlarged. The leaflets of the mitral valve were of normal size and contained small nodules of calcium near the cusp edges. The orifice was centrally placed and admitted one finger. There was a slight amount of regurgitation. The anterolateral commissure was opened by two cuts with the commissurotomy guillotine knife, and an opening that admitted two and a half fingers was obtained without increase in the regurgitant element. Postoperatively the patient did well and was discharged on the 10th postoperative day. The biopsy of the auricular appendage showed no evidence of rheumatic activity. The patient is now receiving digitalis and is on a low-salt diet. She has no need for mercurials and is carrying on her own housework, although now in her fifth month of pregnancy.

Six additional cases are reported in which the patients have become pregnant since commissurotomy (table 2). Of the six patients, four have had normal full-term deliveries, one has had a normal but premature delivery, and one has had a therapeutic abortion. The therapeutic abortion was carried out in a patient who developed auricular fibrillation after commissurotomy. This development, added to the operative findings of thickened and rigid valve leaflets and marked contraction and distortion of the atrioventricular ring, pointed out that her

cardiovalvular status was unfavorable. Only one of the remaining five patients has had any signs or symptoms of cardiac decompensation during pregnancy. This patient, a short woman weighing 180 lb. (81.6 kg.) and having gained 40 lb. (18.1 kg.) after commissurotomy, developed dyspnea during the seventh month. Her symptoms cleared rapidly with bed rest and digitalis, and she went on to spontaneous delivery of a premature, but otherwise normal, infant. Her obesity was obviously a major factor in this episode. She has required no cardiac medication since delivery. Another patient had a normal prenatal course and a normal full-term spontaneous delivery but developed pulmonary edema almost immediately post partum. This was treated with rapid-acting digitalis and oxygen, and the patient made a satisfactory response. She is now caring for her infant at home, has no cardiac symptoms, and requires no cardiac medication. All six patients had careful medical management during the pregnancy and delivery but to no greater degree than the three multigravid women of the series in their earlier pregnancies. The improvement would thus seem to be in part due to the commissurotomy and not simply to careful medical management. Two of these patients had given up hope of ever again being able to bear children but have had normal pregnancies and deliveries without cardiac complications.

COMMENT

To draw conclusions on the basis of such a small series is difficult. It can be definitely stated, however, that mitral commissurotomy may be carried out during pregnancy without harm to the mother or fetus. Further, most of the patients as reported on appear to be greatly benefited. In each, therapeutic abortion, contemplated rightly or wrongly, has been avoided. Pregnancy following commissurotomy as a rule is uncomplicated; however, the patient should be followed closely with cooperation of both obstetrician and cardiologist. The fact that none of the patients who had commissurotomy performed during pregnancy developed either rheumatic reactivation or the pleuropericarditic pain and fever syndrome seen in 38% of our nonpregnant patients[10] would seem to indicate that the hormones of pregnancy have a protective effect against rheumatic activity. This effect has been seen in other collagen diseases in which the patient experiences a remission during pregnancy. Plasma from pregnant women has been successfully used therapeutically in such cases.[11] Further clinical evidence from a much larger series controlled insofar as is possible by laboratory studies must accumulate before a definite statement can be made as to the ameliorative action of pregnancy on postcommissurotomy rheumatic activity.

In order to guide our own selection of cases for mitral commissurotomy during pregnancy, to know when this procedure should be initiated, and to know if future pregnancies will be endangering to the patient, the following tentative criteria have been set up. They are based on our previous large experience with mitral commissurotomy in nonpregnant patients and on the physiological changes in pregnancy as related to the altered cardiorespiratory physiology brought about by mitral stenosis. These may prove useful to others faced with the management of such patients.

1. Mitral commissurotomy is not advisable during pregnancy except in patients in activity stages 3 and 4. It has been shown that patients in activity stages 1 and 2 with mitral stenosis can be safely carried through pregnancy and delivery by a strict medical regimen. Commissurotomy in these cases may be considered at a later date.

2. Patients in activity stages 3 or 4 should have an exploration of the valve and commissurotomy before a therapeutic abortion and sterilization are considered, since many of these patients may be so improved by surgery that such measures will not be indicated. If the surgeon at cardiac exploration encounters a rigid valve, moderate regurgitation, or a marked degree of cardiac enlargement, the obstetrician might be justified in concluding that the present or future pregnancies constitute a threat to the patient's life in spite of a technically adequate commissurotomy.

3. Commissurotomy, if indicated, is best done in the first trimester when the cardiac load is less and when the patient can be so improved by surgery that she can safely go through the remainder of the pregnancy. As a rule it is contraindicated after the 32 week and should be carefully weighed from the 16th to the 32nd week.

4. Mitral commissurotomy should be carried out during pregnancy in a patient of any grade of activity if repeated emboli are endangering the life of the mother and fetus. Commissurotomy is then an emergency and lifesaving procedure.

5. In patients over 35 years of age or in those with auricular fibrillation, the condition of the valve found at surgery and the response following commissurotomy may be used as indications as to whether the pregnancy represents too great a threat to the patient's life. These patients have a greatly increased incidence of cardiac failure, but some may be able to continue the pregnancy after commissurotomy, if there are no other complicating factors.

Thus, the thoracic surgeon rightly enters the picture with the obstetrician and the cardiologist, in the management of cases of mitral stenosis in pregnancy. The evaluation of the findings obtained at the time of valve exploration is of great importance in the continued management of the patient. The rigidity of the valve, the degree of regurgitation, the size of the cardiac chambers, and the presence or absence of left atrial thrombi are some of the major factors that exploration can clarify. Surgical correction of the stenosis is, of course, done at the time of exploration. The risk to both mother and fetus, in experienced hands, is that of any abdominal or thoracic exploration during pregnancy.

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SUMMARY

Mitral commissurotomy offers added hope to women who have feared having children because of mitral stenosis and offers greater assurance of safely retaining a pregnancy in instances where therapeutic abortion and sterilization might otherwise be recommended. Mitral commissurotomy is a safe procedure in the pregnant patient, and the exploration of the valve at the time of commissurotomy gives additional, highly valuable information concerning the risk of continued pregnancy and the advisability of future pregnancies.

ADDENDUM

Since the processing of this paper, the patient in case 5 has delivered a full-term normal infant and is at present in excellent condition.

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PROTECTING THE PUBLIC DURING WEAPONS TESTING AT THE NEVADA TEST SITE

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Five series of tests have been conducted at the Nevada test site totaling 45 detonations and ranging in yield from less than 1 kiloton TNT equivalent (KT) to considerably less than 100 KT. Each of these series has been carefully organized and conducted by a test organization. This test organization, together with the support units, involves thousands of personnel covering a wide range of functions.

As an integral part of the test organization there is an advisory panel composed of experts in the fields of biology and medicine, blast, fall-out, and meteorology. Before each nuclear detonation, a series of meetings is held where the feasibility of firing is carefully weighed by this panel. Major consideration is given to meteorologic conditions, since they will affect the distribution of radioactive fall-out and the severity of the blast wave in off-site areas and will determine cloud formation, which is of importance for aerial flights related to the test. A complete weather unit is in operation at the Nevada test site, drawing upon all of the extensive data available from the U. S. Weather Bureau and the Air Weather Service, plus six additional weather stations ringing the test site. These data are evaluated for the current and predicted trends up to one hour before shot time. A shot can be cancelled at any time up to a few seconds before the scheduled detonation. In the past, more than 50 postponements have been made due to unfavorable weather conditions.

BASIC CONSIDERATIONS FOR PUBLIC SAFETY

The selection of the Nevada test site was made only after extensive studies of several possible locations. It covers an area of about 600 square miles, with an adjacent U. S. Air Force gunnery range of 4,000 square miles. These controlled areas are surrounded by wide expanses of sparsely populated land, thus providing optimum conditions for maintenance of safety. Only the relatively smaller nuclear devices are tested in Nevada. Each device is carefully evaluated for estimated yield before detonation. In addition, considerable effort has been made to reduce the fall-out by resorting to such measures as building higher towers and stabilizing the soil surface around the towers. For purposes of general safety, as well as security, the Nevada test site is closed to the public. Aerial and surface surveys are made to insure that no persons or animals have wandered into the area. Also, the time for each detonation is announced, so that people in the nearby communities may not be unexpectedly startled.

From the Division of Biology and Medicine, Atomic Energy Commission.

Read at the Annual Meeting, American Industrial Hygiene Association, Buffalo, April 25, 1955.

EFFECTS OF NUCLEAR DETONATIONS

The three main effects outside of the Nevada test site from these detonations are the flash of light at the time of burst, the blast wave that follows, and the radioactive fall-out that may occur.

Light Effects.—The effects of the flash of light are essentially no different from those of sunlight. If one were to look directly at the fireball at near ranges, or through binoculars at even greater distances, injury to the eye could ensue. If the degree of damage is relatively slight, only momentary blindness will result; if the amount of light and heat energy received is greater, then permanent damage to the fovea may occur. Since it is necessary to detonate most of the nuclear devices at predawn for successful instrumentation, the eyes are in a receptive condition.

Personnel on-site are required to wear special high density glasses or to turn away from the direction of the burst. The use of binoculars is prohibited. Similar precautions are recommended to the public viewing the shot from outside the test site. Since motorists may be startled by the bright light from the burst, road blocks are established on key highways about one hour before shot time to inform persons of the detonation and all traffic is halted at five minutes before H hour on nearby highways that are in direct line of sight. A circle about 65 miles in radius is established around the Nevada test site in which aircraft travel is restricted from 30 minutes before the planned time of detonation until 30 minutes afterward to prevent possible momentary blindness. There have been no known cases of serious eye damage from light effects to personnel off-site. Some observers on nearby mountains, who did not wear dark glasses, have reported temporary blind spots. Four military personnel participating in the Nevada tests have received eye injuries—one was serious and three were superficial and are now completely healed.

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Blast Effects.—Off-site the shock waves of concern are those that are reflected from the ozonosphere (an atmospheric layer 20 to 35 miles above the surface of the earth) or propagated through the troposphere, which extends up to 6 miles. Reflected shock waves from the ozonosphere may reach 60 to 150 miles from the test site. They may be strong enough to be distinctly heard but have not resulted in any known damage to buildings. Shock waves propagated through the troposphere can be severe enough to break some windows and cause minor damage to buildings in off-site areas. The strength of these shock waves depends upon such factors as wind structure, temperature, and yield and height of bursts. It is usual to experience a focusing effect due to the deflection of the shock wave in the troposphere. This can result in one area receiving a relatively high shock wave while a nearby community many not even hear the blast. Prior to each nuclear test, high explosive charges are set off to test the blast wave propagation. If there is any likelihood that a community may receive a mild shock wave, its residents are advised to open windows and doors to help equalize the air pressure. If a strong blast is indicated at any community, the shot may be postponed. As a result of past test operations, allowed claims for blast damage to structures have amounted to about $44,300. There have been no reported cases of injury to people.

Radioactive Fall-Out.—After each nuclear detonation, radioactive isotopes are formed. If the burst is high in the air, this activity becomes associated with fine particles that are swept high into the air and descend to the earth's surface rather slowly. Due to this relatively long time for deposition, the level of radioactivity has decayed by large factors and particles have become widely dispersed due to air currents. The net result is that only small amounts of fall-out material, having relatively low activity, reach the earth's surface from such detonations.

In the case where the fireball touches the ground, large quantities of dirt are drawn into it and form nuclei to which the radioisotopes become attached. The larger particles will fall principally in nearby areas in a matter of minutes to hours, thus producing higher degrees of contamination. In an added effort to reduce this phenomenon, higher towers were built and the soil surfaces around some of these towers were stabilized with asphalt.

The program for protection of the public relative to radiation exposure has constituted a major effort on the part of the Atomic Energy Commission and the test organization. Prior to each nuclear detonation a "warning circle" is established for aircraft, designed to provide control of aerial flights within the area of predicted path of the atomic cloud. Through the cooperation of the Civil Aeronautics Administration, their representative is assigned to the test organization and assists in establishing the controlled area. This may typically extend about 150 miles in radius and be in force for a period from about H minus one-half hour to H plus 10 hours. All aircraft are required to check through the Civil Aeronautics Administration before flying in this area. Additional sectors may also be closed to all aircraft for a lesser number of hours and shorter distances from the test site.

The off-site monitoring program during Operation Teapot this spring was developed into an elaborate system not only to take numerous radiological measurements but also to provide close liaison with the citizens of nearby communities. The Atomic Energy Commission and the U. S. Public Health Service jointly organized a program wherein the areas around the test site were mapped out into 12 zones. A technically qualified man was assigned to live in each zone. His duties consisted not only of normal monitoring activities but also, prior to and during the test series, of learning the communities and families in his zone, getting to know the people and having them know him, and developing such a rapport that they would seek his advice if they had any misgivings and would respect his decisions. In addition to the 12 zone commanders, as they were called, there were six mobile monitoring teams on call to go to any locality to assist if needed or to travel to areas outside the 12 zones.

After each nuclear burst, aircraft from the test organization tracked the cloud until it was no longer readily detectable. Behind this came other aircraft to plot the fall-out pattern on the ground. This survey was repeated on D plus one day. Also, eight small aircraft of the Atomic Energy Commission raw materials exploration branches were on call to monitor at greater distances if the need arose.

Four additional monitoring programs were also in operation. One of those projects was primarily of research nature yet provided radiation monitoring data out to 160 miles from the test site. A second program was a unique system of telemetering, whereby instruments were placed in 30 communities around the test site and connected to commercial telephone wires. The operator would sit at the control point and, by placing a normal telephone call, would receive back signals that would be translated in a matter of seconds into gamma radiation dose rates. A third project consisted of automatic instruments located in another 30 communities that permanently recorded the gamma dose rates continuously from the beginning to the end of the test series. A fourth program consisted of aerial surveys with special gamma detection instruments. By this means, large areas were surveyed in a matter of a few hours and fall-out contour maps quickly plotted.

The programs of monitoring did not stop at areas around the Nevada test site but stretched across the United States. Through the cooperation of the U. S. Weather Bureau about 90 stations made collections of fall-out. The samples were counted at the Atomic Energy Commission's health and safety laboratory at New York City. In addition, data were collected at 10 commission installations in different parts of the country.

A system of liaison was established between the state and local public health officials and the test organization plus the 10 commission installations across the country. The public health officials in Nevada and neighboring

states were kept routinely informed, and all were free to request data at any time. In addition, liaison was established between the state civil defense officials in Nevada and neighboring states and the test organization.

RADIOLOGICAL SAFETY CRITERIA

For Operation Teapot, radiological safety criteria for protecting the public were formulized in an Atomic Energy Commission document (Feb., 1955) entitled "Radiological Safety Criteria and Procedures for Protecting the Public During Weapons Testing at the Nevada Test Site." Since space does not permit a full discussion of these criteria, some of the important aspects will be presented. These criteria apply to peace-time nuclear weapons testing and not to civil defense in the event of warfare.

Excerpts from the introduction to the criteria are as follows:

The criteria and procedures set forth in the following paragraphs were established after full consideration for protecting the health and welfare of the public, both in terms of radiological exposure as well as possible hazards, hardships or inconveniences resulting from disruption of normal activities. Criteria are established as guides for the Test Organization in determining whether any special actions should be taken to protect the public. . . .

TABLE 1.—*Radiological Criteria for Evaluating Feasibility of Evacuation*

Effective Biological Dose * Calculated to be Delivered in a One Year Period Following Fallout	Minimum Effective Biological Dose That Must Be Saved by Act of Evacuation (Otherwise Evacuation Will Not Be Indicated)
Up to 30 roentgens	(No evacuation indicated)
30 to 50 roentgens	15 roentgens
50 roentgens and higher	(Evacuation indicated without regard to quantity of dose that might be saved)

* The "effective biological dose" is an estimate of a biological "damage" dose, taking into account the length of time for delivery of a given dose, and the reduction of dose due to (a) shielding afforded by buildings and (b) the process of weathering.

The following criteria do not apply to domestic or wild animals since levels of radiation which would be significant to them would have to be higher than those specified herein.

Evacuation.—Although it was not anticipated that it would be necessary to evacuate a community because of hazardous conditions, nevertheless, it appeared wise to have previously established criteria to meet this unlikely possibility. Indeed, with the size of the nuclear detonations and the precautionary measures in force at the Nevada test site, it is difficult to imagine a situation where the amount of fall-out would be truly dangerous.

The following excerpts are quoted from the criteria concerning evacuation:

The decision to evacuate a community is critical for two principal reasons. One, presumably there might be a health hazard if the personnel were allowed to remain. Two, there is always an element of danger and/or hardship to personnel involved in such an emergency measure.

It is recognized that extenuating circumstances may accompany any situation where conditions indicate evacuation as a mode of action. The size of the community, areas and accommodations available for the evacuees, means of transportation and routes of evacuation, disposition of ambulatory cases, protection of the property left behind, and many other factors may enter into the decision relative to evacuation. Further, it is recognized that under certain conditions, the evacuation of a community might not only prove rather ineffectual but could result in greater radiation exposure than if the population remained in place unless the situation be adequately evaluated. A blanket evaluation cannot be made in advance; each situation can be unique. The following criteria therefore are suggested as guides in assessing the possible radiological hazards; the final decision must be made on the basis of all relevant factors known at the time.

Table 1 summarizes the radiological criteria to be used in evaluating the feasibility of evacuation.

TABLE 2.—*Predicting Effective Biological Doses from Dose-Rate Readings*

	A Theoretical Maximum Dose (Based on Best Estimated Rate of Decay)	B Effective Biological Dose Factor	C Effective Biological Dose *** (Column A × B)
From time of fallout until time of evacuation	..	½	..
From time of evacuation to time of return *	..	½	..
From time of return to a time 15 days after initial fallout **	..	½	..
From 15 days until one year after initial fallout	..	⅓	..
		Total	..

* This estimate is based on the concept that if evacuation were *not* accomplished then a certain radiation dose would be accumulated over the period of time selected. This time period also represents the radiation dose saved if evacuation *were* accomplished.

** This assumes that the time of return occurs before 15 days. A period of 15 days was selected to provide a dividing point upon which to estimate the effective biological dose factor (Column B).

*** The effective biological dose factor is an estimate of reduction of biological damage from that indicated by the theoretical maximum dose. It includes the factors of attenuation provided by buildings, of weathering, and of reduction of biological effectiveness due to extending the time of delivery of a given dose. It represents the best estimate of radiation dose in terms of biological effects.

Owing to the necessity of making early measurements and decisions, it is to be expected that dose-rate readings, taken with survey meters, will be the available evidence at the times of concern. Table 2 summarizes the parameters considered in estimating an effective biological dose based on dose-rate readings.

At later times after fallout, better estimates of radiation doses received may be obtained from film badge readings or dosimeters. If these film badges or dosimeters are worn on personnel and the evidence of their use supports the view that the readings are a reasonably accurate account of the radiation dose received

TABLE 3

	A. Film Badge Reading	B. Biological Factor	C. Film Badge or Dosimeter Correction	D. Effective Biological Dose Factor (Column B × C)	E. Effective Biological Dose (Column A × D)
From time of fallout until time of evacuation	..	⅓	¾	¾	..
From time of return to 15 days after initial fallout	..	¾	¾	½ *	..
From 15 days until one year after initial fallout	..	⅔	¾	½	..
				Total:	..

* The value of 9/16 has been rounded off to ½.

then the values recorded on the film badge or dosimeter may be accepted with a correction factor of ¾ to account for the difference between the dose received by the film badge or dosimeter (including backscatter) and that received at the tissue depth of five centimeters.

Table 3 may be used in estimating the effective biological dose.

Reducing Beta Dose to Skin.—The next three criteria deal with people remaining indoors and decontamination of personnel and of motor vehicles. Unfortunately, space

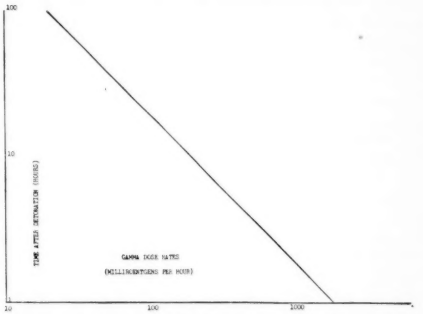
again does not permit a full discussion of the basic reasoning leading to the criteria, but some of the essential points may be covered. These three criteria were directed toward the principal concern of reducing the beta dose to the skin. The importance of this factor may be illustrated in the case of the fall-out on some inhabitants of the Marshall Islands during Operation Castle. Fifty-eight out of the 64 personnel from Rongelap Island experienced some degree of beta burns, and epilation in differing amounts occurred in 36 of these. It was also the opinion of the Japanese doctors that a significant contributory factor to the physical state of the Japanese fisherman who received fall-out was the skin damage undoubtedly produced by the beta emissions. Likewise, some horses and cattle grazing within 20 miles of ground zero at the Nevada test site during past tests were found to have beta burns.

Obviously, the best method of reducing beta skin doses is to prevent the fall-out material from coming in contact with the skin or to remove it as soon as possible if it has been deposited. Remaining indoors with windows and doors closed during the time of actual fall-out (about an hour or so for the Nevada tests) will essentially eliminate direct contamination, but there may remain the problem of secondary contamination from the surrounding environment. Simple measures such as brushing off and/or laundering of clothing and bathing for personnel should be very effective in reducing the contamination.

Because of the large number of parameters and variables involved, it is extremely difficult to estimate the beta doses that may be delivered to the skin from fall-out. Further, operational plans of monitoring fall-out make it highly desirable, if not essential, to estimate beta doses to the skin from gamma survey readings. The uncertainties here are obviously great; however, monitors need simple procedures and instruments where prompt measurements can be made and decisions quickly reached. For this reason, an attempt was made to estimate the ratio of beta to gamma dose rates from fall-out. Extensive analysis was made of laboratory data, as well as data collected from the nuclear weapons tests. After many simplifying assumptions, my estimation of gamma dose rates at 3 ft. above the ground (as measured by such an ionization type survey meter as a AN/PDR-T1B of the U. S. Army Signal Corps) to beta dose rates to the basal layer of the epidermis from fall-out material of similar concentration directly in contact with the skin lies between 100-200 to 1, with a highest probability being about 125 to 1.

If the gamma dose rate reaches the levels shown in the graph, or where there is an indication that it will reach these values, the criteria recommend that personnel remain indoors with windows and doors closed during the time of fall-out. Taking a gamma dose rate reading from the graph and assuming (*a*) the activity decays according to $t^{-1.2}$ (time) and (*b*) that the fall-out material remains in contact with the skin for its radioactive lifetime, then an estimated total of about 1,250 rep will be delivered to the basal layer of the skin. Even under this latter somewhat pessimistic assumption, it would not be expected that erythema would appear. Due to the particulate nature of fall-out, one could not guarantee that a small beta burn would never occur. There is, however, an added safety factor in the fact that the skin is a relatively rapidly reparable organ. Comparison of beta dose rates delivered by uniformly distributed fall-out material with the estimated reparable rate suggests that, even for times of early fall-out when the dose rates are higher, they may exceed those indicated in the graph by a factor of 2 to 3 without producing erythema. Graphs similar to the one above have been prepared for monitoring personnel and vehicles. The gamma dose rate values for personnel monitoring were developed on a similar reasoning as above while those for vehicles attempted also to take into account such variables as the amount of contamination that might be picked up by wiping the hands on the vehicle or in the changing of a tire.

Contamination.—Criterion 5 dealt with contamination of water, air, and foodstuffs. In brief summary, analysis of a vast amount of data indicates that the external



Gamma dose rates from fall-out versus times after detonation when personnel shall be advised to remain indoors.

hazard is the more limiting factor than the internal for those areas where the radiation levels are below those stipulated for possible evacuation. This does not imply that at higher levels the situation would be changed but rather that, if evacuation took place, there would be an opportunity to give full evaluation to the situation before return of the population. Of course, a continuing program of monitoring of air, water, and foodstuffs is recommended, especially in those areas of relatively heavy fall-out, but this is principally for documentary purposes. Possibly the source of greatest intake of radioactive fall-out may be by way of eating leafy plants and here a simple washing of foodstuffs would be quite effective in removing the contamination.

Gamma Radiation Exposure.—The sixth and last criterion concerns routine gamma radiation exposure from fall-out. The recommended guide is 3.9 as the whole body gamma effective biological dose for off-site populations over a period of one year. This total dose may result from a single exposure or a series of exposures. One of the principal reasons for setting this guide at a lower

value than for workers is the fact that here we are concerned with a general population rather than adults who knowingly accept certain radiation exposures.

The following excerpt is abstracted from the Commission's criteria:

> If integrations of dose rate readings are used in estimating the effective biological doses, then Table 4 may be used.
>
> If film badges or dosimeters are worn on personnel and the evidence of their use supports the view that the readings are a reasonably accurate account of the radiation dose received, then the values recorded on the film badge may be accepted with a correction factor of ¾ to account for the difference between the dose received by the film badges or dosimeters (including backscatter) and that received at the tissue depth of five centimeters.

RADIOLOGICAL DATA FROM PAST TESTS

It will obviously be impossible to review all of the radiological data from past tests at the Nevada test site. A summary of those data, however, is reported in the Atomic Energy Commission's 13th, 14th, and 16th semiannual reports to Congress. These reports are entirely unclassified. Possibly the most pertinent summarizing statement that can be made is that after five major series of nuclear weapons tests at the Nevada test site no one has incurred radiation exposures off-site that may be considered anywhere near hazardous. It is true that fall-out caused beta burns on some cows in the spring of 1952 and also some horses in 1953. The cows were 15 to 20 miles from ground zero and the horses at a lesser distance. There were no other ill-effects except for a skin damage. There have never been any reported cases of beta burns on people.

TABLE 4

	Multiplication Factor	Effective Biological Dose
Maximum theoretical radiation dose from time of fallout to 15 days later	¾	..
Maximum theoretical radiation dose from 15th day to one year	½	..
		—
	Total (best estimate of effective biological dose)	..

The highest total effective biological dose at any place where people were living (about 15 persons), for all five of the test series, was about 7 r; the highest total for any community (population 200) was about 4 r.

The highest concentration found in water was in upper Pahramagat Lake, Nevada, with a value of 1.4×10^{-4} μc per milliliter at three days after detonation. This is about one thirty-sixth of the maximum permissible concentration for water that might be stored and used as a sole source of supply for a lifetime. The highest concentration found in the air was 1.3 μc per cubic meter averaged over 24 hours. Since this persisted for only about 24 hours, the total estimated dose to the lungs was about 130 milliroentgen equivalents physical. The deposition of internal emitters was calculated to be correspondingly small.

SUMMARY

There were in operation during the test series in Nevada a system of precautionary measures, an extensive off-site radiological safety monitoring program, four additional projects near the test site, and a country-wide system for radiological monitoring. At the test site, two short-wave radio networks were in operation, as well as telephone and messenger service, to provide uninterrupted transmission of information. A wide range of radiac instruments were employed, plus film badges and gummed paper trays; in addition, two complete laboratories were in operation at the test site to provide a running analysis of the samples collected. The types of data collected from the various programs were gamma dose rates above the earth's surface and concentrations of radioactivity in air, water, soil, and foods. These data are reported in the Atomic Energy Commission's unclassified semiannual reports to Congress. More than 100 personnel from the test site devoted their full time to the task of directly protecting the public during weapons tests, and many additional personnel participated on a part-time basis throughout the United States. Liaison was established with interested groups, including state and local public health officials and civil defense. Radiological criteria were formalized and in operation. These efforts reflect the sincere desire on the part of the Atomic Energy Commission and the cooperating agencies to provide reassurances to the public that weapons tests at the Nevada test site can be, and have been, conducted safely. It is recognized that the nuclear weapons testing programs in Nevada are a vital part of our national defense efforts. The operational procedures established to conduct these tests have reduced the element of hazard to minimal levels.

1901 Constitution Ave. (25).

The Baby Boom Continues.—The baby boom which started at the close of World War II continues unabated. From 1946 through 1954 the number of births in the United States averaged in excess of 3¾ million annually, or 1⅜ times the number in 1933. Births reached an all-time high of 4,076,000 in 1954, and the end of the boom may still be several years ahead. An important factor in the recent upsurge in births has been the marked rise in the number of married women. Wives at ages 15-44 have increased in number by one seventh since 1945, and by more than one third since 1933. A second factor has been the almost uninterrupted rise in the fertility rate from its low level in the 1930's. In each of the postwar years about one out of every six married women aged 15-44 bore a child, but in the mid 1930's the proportion was only one in eight. The baby boom started with a sharp upswing in first births, their number increasing by almost two thirds in the two years from 1945 to 1947. This sharp rise reflected not only the high marriage rate following demobilization, but also the return of many servicemen to family life. At the peak in 1947, first children were born at the rate of 69 per 1,000 married women aged 15-44. Subsequently, however, the rate declined rapidly, parallel to the general decrease in marriages. By 1949, it had fallen to 52 per 1,000; currently, the rate is about 46 per 1,000. . . . Particularly noteworthy has been the sustained high rate for second births, which for nine consecutive years has continued at the highest level in at least a generation. In this period, the rate for second births averaged close to 45 per 1,000, compared with rates below 30 in the years 1933-1937. . . . Equally striking has been the rapid rise in the rate for third births. From its low point of 17 per 1,000 in the late 1930's, the rate for third births has climbed to 31 per 1,000—the highest in more than a third of a century. . . . With the continuation of favorable economic and social conditions, the expected decline in the birth of second and third children may be offset in considerable degree by the rise in births of fourth and higher orders.—The Baby Boom Continues, *Metropolitan Life Insurance Company Statistical Bulletin*, April, 1955.

THE MEDICAL PROFESSION AND TRAFFIC ACCIDENTS

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Accidents are the third cause of death and, as such, deserve more attention from the medical profession than they have hitherto received. While heart disease is the leading cause, and cancer takes second place, the role of accidents can no longer be ignored in our consideration of the present-day health problems. This is particularly true if we present the problem statistically in life years lost rather than the usual crude death rate or standard death rate. In a recent year (1952) in British Columbia, it is noted that, although heart disease was the leading cause of death and accounted for 36.2% of all deaths, heart disease was only responsible for 12% of life years lost from all causes of death. Cancer, the second cause, accounted for 15.7% of all deaths, but cancer was responsible for only 10% of life years lost from all causes. On the other hand, accidents, although accounting for only 7.9% of all deaths, were responsible for 17.5% of life years lost from all causes of death, and, of these, motor vehicle accidents accounted for 25%. The persons responsible for the present conference deserve much credit for focusing attention on this important subject.

As one of the leading causes of death and as a potent factor in the etiology of many serious orthopedic and other defects, accidents should be studied as any other common "disease" is studied. We should concern ourselves in the problem of motorcar accidents with prevention, treatment, and rehabilitation, just as we would in any other disorder capable of causing such mortality and morbidity.

PREVENTION OF ACCIDENTS

Under the heading of prevention, there is to be considered the car, the roadway, and the driver, and we would all agree that, of these, the driver is most often at fault. Much has been said of the need for safety belts in cars, seats that are made a part of the car frame, doors that would not spring open, telescoping steering wheel posts, windshields that would collapse outward on impact, and well-padded instrument panels, but safety factors such as these are of little benefit in a car operated by an individual with a physical, mental, or emotional defect that makes him an unsafe driver. Regardless of the safety factors in the driver's car, pedestrians and passengers in other cars must be considered. One might speculate on the menace of the continuing effort to supply motorcar engines with more and more horsepower. The boast that a car can do 100 miles per hour only emphasizes the danger of putting such a potentially dangerous machine into unqualified hands.

The matter of roads is of some importance. With the great increase in motor transportation in general, and with the constant demand for better roads, we have seen the construction of through ways, turnpikes, and six-lane highways that have in fact become speedways. While such excellent roads are important and have value to the country as a whole, they may invite an excessive speed that may prove them to be a menace when used by careless or impaired drivers. While accidents can and do happen on poor roads, those associated with excessive speeding, as many accidents are, can occur much more commonly on the wide, straight speedways. Given a road that invites high speed and a motor capable of driving the car at dangerous rates, it is small wonder that motor accidents are frequent.

As already indicated, regardless of the horsepower or the physical nature of the roadway, it is the human factor that is most often responsible for traffic accidents. Attention, therefore, must be focused on the driver and his abilities or lack of abilities to safely and efficiently operate a motorcar. Chapman,[1] has suggested an epidemiological approach to traffic safety. He suggests we study the drivers as individuals to discover those defects, physical or psychiatric, that may contribute to the fact that they cannot operate a motorcar without endangering their own or other lives. While such a study would be expensive, that expense would be small compared with the present cost of motor accidents. If physical, mental, or emotional defects were found to be responsible, legislators should insist that all drivers have annual examinations adequate enough to reveal the underlying defect.

Prevention of traffic accidents will never be easy and can never achieve, for example, the results secured by preventive medicine in the control of infectious diseases. That preventive measures can be effective, however, is shown by the fact that, in spite of the enormous increase in the number of motorcars, the increase in horsepower per car, and the increase in good roads, there is evidence that accidents per 100 million miles of driving have dropped from 15.9 in 1935 to 8.1 in 1948, and to an estimated 6.4 in 1954.

In the assessment of physical factors much attention has been focused on the elderly driver, and in many places special examinations and medical certificates are a prerequisite of a driver's license for persons over 70 years of age. Experience would indicate, however, that more accidents occur as a result of carelessness of the young driver. There is evidence that young people who receive adequate driving lessons—and some of these are provided in high schools—become better drivers and show a lower accident rate than those who are trained in a haphazard way. There is naturally resistance to the inclusion of driving lessons in the ordinary high school curriculum, and this training is often given as an extracurricular activity. Private driving schools with adequate personnel and equipment can offer an excellent course. The time may come when no young person will receive a driver's license unless or until he has received such adequate training in either public or private school. Certain physical factors are of obvious importance in determining an individual's fitness to drive. Good vision is essential, and accurate color perception must be shown. In old

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President, Canadian Medical Association.

Read at the Montreal Conference on the Medical Aspects of Traffic Accidents, Montreal, Canada, May 4, 1955.

1. Chapman, A. L.: An Epidemiological Approach to Traffic Safety, Pub. Health Rep. **69**: 773-775 (Aug.) 1954.

age, reaction time is slowed and may be a factor even in the absence of other demonstrable or significant defects. While it has been common to complain of the woman driver as a menace on the road, recent evidence —and, since it comes from automobile insurance companies themselves, it would seem to be incontrovertible —indicates that young women under 25 are better drivers, that is, have fewer accidents, than men of that age.

CONSTITUTIONAL FACTORS

Of the constitutional factors that may affect an individual driver, our chief concern is for those conditions in which a sudden aberration may occur. Epilepsy is, of course, a condition of this sort. While many epileptics can and do operate motor vehicles, they represent one of the serious problems in this whole subject. Not only is the question of whether an epileptic should operate a motorcar a problem but there is the related question of whether the doctor is guilty of a breach of professional confidence when he reveals that diagnosis. A recent recommendation by the committee on ethics of the Canadian Medical Association is: (1) that, in accordance with our rules of ethics, it would not be proper for any physician to divulge confidential information of any kind to any layman or government authority without the written consent of the person concerned, or unless compelled to do so by statute; and (2) if and when the profession is called upon by statutory authority to divulge information of disabilities that might make driving unsafe, this information should, in our opinion, be given to a medical referee or medical consulting board, who would give a considered opinion based on the evidence submitted. The decision on this point should not be in the hands of laymen or of any government official.

The diabetic patient also poses a problem, not only because of his disease but because he may be subject to insulin reaction that would impair his ability to drive a car. Syncope, while appearing important to the lay authorities, is probably seldom a cause of an accident. Syncope can be the simple vasovagal condition or may be that precipitated by disturbances of cardiac function such as occur in complete heart block, Stokes-Adams syndrome, or paroxysmal tachycardia. Some valvular conditions, especially a high-grade aortic stenosis, may be responsible for loss of consciousness. Ménière's syndrome, with sudden onset of severe vertigo, and the carotid sinus syndrome may also be responsible for sudden and temporary impairment. Hypertension alone is not of much significance, but it may be important as the contributing factor in cerebral or coronary episodes. While these conditions do, on occasion, precipitate a motor accident, the incidence of these in the over-all picture must be very low.

DRINKING AND ACCIDENTS

Intoxication ranks much higher than physical defects as a cause of motor accidents, and, of course, the commonest toxin is alcohol. The relation of drinking to driving is becoming more and more apparent, and, in those who risk their own and other lives by this combination, a psychiatric approach is probably desirable. The part that alcohol plays in traffic accidents is difficult to estimate with absolute accuracy for many reasons, but it is probably true that drinking is a factor in as many as 50 to 80%. Tests to determine the degree of intoxication have many shortcomings. In the first place, such tests ignore the factor of tolerance, and it is well-known that individuals vary widely in their susceptibility to the effects of alcohol. The control of drinking by drivers requires education of the public to the grave dangers of this sequence. The slogans "If you drive don't drink" and "If you drink don't drive" may yet play a useful role in this program. Public education along these lines must be intensified and should probably be included in the high school courses along with the training in driving. Road blocks with tests of drivers' sobriety have been shown to be effective not only as a means of catching the driver that has been drinking but as a deterrent to all who drink. Other toxic factors are barbiturates and antihistamines, both of which may, on occasion, cause impairment of driving ability. Narcotics are not so apt to cause impairment of physical ability to drive as to make the user careless regarding excessive speed and other violations of traffic rules and regulations.

Aside from toxic factors, the whole subject of behavior of drivers of motor vehicles needs review. Why do some individuals persistently break the speed limit, take unnecessary chances on the highway, disregard traffic lights, and speed through school zones? Here is evidence of a behavior problem that may rest on an emotional or even a psychiatric basis. The approach to this aspect of the problem should be first to diagnose the emotional instability and then to insure such measures as are necessary to prevent that individual from driving a motor vehicle.

Fatigue is undoubtedly an important factor in some accidents, and tests have shown that, when overtired, a driver's judgment becomes impaired, his vision may be affected, and he may actually go to sleep at the wheel. As a part of the program of public education, emphasis should be placed on the dangers of driving too long at a time and on driving when overtired.

TREATMENT

The experience gained in the two world wars, plus that resulting from the high incidence of accidents in civilian life, has led to great improvement in methods of treatment of all forms of accidents. It is well-known that the mortality from accidents was much lower in World War II than in World War I and that the continued improvement in our ability to care for the victim of an accident and our ability to combat the secondary infection is causing a decline in mortality, with many surviving, some with serious physical defects. First-aid measures should be included in our program of education, because the unwise handling of an injured person may do more harm than the accident itself. Treatment must, of course, be prompt to be effective. In our urban centers, adequate treatment facilities are probably readily available, and in rural areas, where motor accidents also occur, the victim can usually be brought to adequate treatment centers promptly by modern transportation services, particularly by air. The whole subject of the treatment of these accident cases will be discussed by others on the program of this conference.

REHABILITATION

As indicated above, with present-day treatment of accidents, including better anesthesia, more blood transfusions, and the use of antibiotics to control infection, more and more of the seriously injured are being salvaged. This fact alone has greatly increased the need for all those services that are aimed at the restoration of that disabled individual to his fullest physical, social, and economic usefulness. These services include the help of doctors trained in physical medicine and rehabilitation, physiotherapists, occupational therapists, brace makers, vocation counselors, and placement officers. Psychologists, too, play an important role in the complete rehabilitation program. Rehabilitation is not something to resort to when all other measures have failed but should be started as soon as the patient has recovered from the immediate effects of his accident. Every general hospital should have a department of physical medicine, and every large hospital should have in addition adequate rehabilitation services. The medical profession needs education in this regard, since the success of any rehabilitation effort may depend in great part on the initial medical approach. Rehabilitation will not be successful unless there is complete cooperation by the patient, and that cooperation may not be forthcoming unless the first medical attendant has planted the idea that some measure of rehabilitation is probable. Rehabilitation must be started in the hospital and may be carried on there or may be continued in a separate community rehabilitation center. The advantage of the rehabilitation ward or wing of the hospital is that rehabilitation will be started early and will be more apt to continue uninterruptedly there than if the patient must be transferred to another environment and another staff of doctors and physiotherapists. The disadvantages of the hospital location are that: (1) by and large, most hospital beds are needed for patients with acute short-term illness; and (2) the psychological environment of the hospital is apt to be geared to the needs of the sick, rather than to the needs of those who are rapidly getting well. The ideal arrangement is that there be adequate physical medicine and rehabilitation services in hospitals working in close conjunction with an adequately housed and staffed separate rehabilitation center.

CONCLUSIONS

From the standpoint of the medical profession, control of traffic accidents would seem to require more attention to the drivers. No one should be given a driver's license unless he is competent to drive, and competency should be determined by more than a consideration of age and gross physical defects. For those guilty of excessive speeding and violation of traffic rules and regulations, particularly the repeaters, the penalties should be severe. An intensive program of public education should be directed toward the dangers of driving after drinking.

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ETIOLOGICAL DIAGNOSIS OF PLEURAL EFFUSION BY PLEURAL BIOPSY

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Pleural effusion in previously healthy, usually young adults has always posed a diagnostic problem to the medical profession. The general opinion is that 70 to 80% of such effusions represent pleural manifestations of tuberculosis [1]; however, a multiplicity of etiological factors account for the other 20 to 30% of pleural effusions. Among them may be listed primary or secondary carcinoma of the lungs, bacterial or viral pneumonia, lymphoblastoma, acute rheumatic fever, nephrosis, panserositis, cirrhosis, lung abscess, congestive heart failure, pulmonary embolism, acute polyarthritis, ovarian neoplasm, blood dyscrasia, infectious mononucleosis, and cholesterol effusion.[2]

There are considerable differences in the ability of various laboratories to demonstrate tubercle bacilli in pleural fluid bacteriologically or by guinea pig inoculation. The best of results run as high as 90%,[3] but, in general, 70% may be considered as excellent, with no more than 50% reported by most workers.[4] Results depend to a considerable extent on the bacteriological techniques used. Best results are obtained when large quantities of fluid are centrifuged and the sediment used for smears, cultures, and guinea pig inoculation.[5] In addition, and not infrequently, positive sputum or gastric washings may be secured in patients with pleural effusion, despite the fact that roentgen evidence of pulmonary lesions is absent. There are still left, however, a significant number of cases in which no bacteriological confirmation is forthcoming and in which the

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The pleural biopsies were done by Drs. J. V. Comer and L. Vaughan, Thoracic Surgical Section. All microscopic sections were reported by Dr. O. Auerbach, Chief, Laboratory Service. Dr. Auerbach also gave advice and suggestions.

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2. Rubin, E. H.: Diseases of the Chest with Emphasis on X-Ray Diagnosis, Philadelphia, W. B. Saunders Company, 1947, p. 548. McKay, D. G.; Sparling, H. J., Jr., and Robbins, S. L.: Cirrhosis of Liver with Massive Hydrothorax, Arch. Int. Med. **79**: 501-509 (May) 1947. Danzig, L. E., and Pope, R. H.: Pleural Eosinophilia with Special Reference to Its Association with Pulmonary Emboli, Am. Pract. & Digest Treat. **2**: 254-259 (March) 1951. Lees, A. W.: Acute Polyarthritis with Pulmonary Consolidation and Pleural Effusion, Brit. M. J. **1**: 246-248 (Feb. 2) 1952. Freedman, P.; Levine, S., and Solis-Cohen, L.: Hemothorax in Blood Dyscrasias, Am. J. M. Sc. **205**: 692-696 (May) 1943. Vander, J. B.: Pleural Effusion in Infectious Mononucleosis, Ann. Int. Med. **41**: 146-151 (July) 1954.

3. Close, H. G.: Tubercle Bacilli in Pleural Effusion of Young Adults, Lancet **1**: 193-195 (Feb. 9) 1946.

4. Kayne and others.[1] Karton, I. G., and Purves, R. K.: Tuberculous Pleurisy with Effusion: Analysis of 215 Cases Hospitalized at an Army Chest Center, Am. Rev. Tuberc. **56**: 184-189 (Sept.) 1947. Falk, A.: The Prognostic Significance of Idiopathic Pleural Effusion, Dis. Chest **18**: 542-561 (Dec.) 1950. Bonilla, J. L., Jr.: Pleurisy with Effusion, Am. Rev. Tuberc. **46**: 59-66 (July) 1942.

5. Lemon, W. S.: Tuberculous Pleurisy with Effusion: Clinical Aspect, Southwestern Med. **16**: 364-373 (Sept.) 1932.

diagnosis must remain in doubt. In such cases, the patients, because of the statistical probability of tuberculous infection, are frequently subjected to care in institutions with patients who have active cases of tuberculosis. This may be undesirable; in addition, other causes of effusion such as malignant disease or lymphomas may be overlooked, and available therapy may be delayed for prolonged periods of time.

A procedure that would quickly give a definite diagnosis and, at the same time, not endanger the patient in any way would appear to be urgently required. It is felt that pleural biopsy offers such a procedure. The only report of its previous use is that of Sutliff.[6] In the hands of experienced thoracic surgeons, this procedure ap-

Fig. 1.—Tuberculous focus (case 1) showing necrotic center surrounded by wide area of tuberculous granulation tissue.

pears to involve no difficulty or particular danger. The time consumed is approximately one-half hour. With the patient in the supine position, an appropriate intercostal incision, about 8 cm. in length, is made. The incision is carried through all layers in the same line to the parietal pleura, and an oblong section of parietal pleura, measuring approximately 1.5 by 3 cm., is excised. The pleural space is observed and the underlying lung palpated. After aspiration of all available fluid, the wound is closed in layers with an indwelling 22 F. catheter, which is removed at the conclusion of the procedure after aspiration of air and fluid.

6. Sutliff, W. D.; Hughes, F., and Rice, M. L.: Experiences with Pleural Biopsy and Pleural Biopsy Cultures, in Transactions of the Twelfth Conference on the Chemotherapy of Tuberculosis of the Veterans Administration, Army and Navy, Atlanta, Ga., Feb. 9-12, 1953, pp. 175-177.

REPORT OF CASES

Case 1.—A 40-year-old Negro male veteran was admitted to the hospital after one week of pain in the right side of the chest, cough, and expectoration. When he was hospitalized in December, 1953, for hemorrhoids, a roentgenogram of the chest was normal. The patient worked until April 25, 1954, when he noted the onset of pain in the right side of the chest, which was aggravated by cough and respiration. This pain persisted to the time of readmission on May 3, 1954. Review of the history indicated that the patient had noted weakness and easy fatigue for two or three weeks prior to admission. His appetite had been poor, but there was no nausea, although there had been vomiting with severe cough; history was irrelevant.

The patient was a moderately well-developed and nourished Negro man, exhibiting no cyanosis or orthopnea but breathing quite shallowly and rapidly, as if in distress. He was oriented and cooperative. His temperature was 98 F, pulse rate 96 per minute, and blood pressure 128/70 mm. Hg. The trachea was in the midline; the chest revealed restricted motion of the right hemithorax in the presence of shallow respiration. The right lung was dull to flat in the lower and lateral third, with diminished breath sounds; there were no rales. The left lung was clear. The remainder of physical examination was noncontributory. Urinalysis, serology, hemogram, and cephalin flocculation test yielded no abnormal findings. Bacteriological examinations of pleural fluid, sputum, and gastric contents were negative on smear of concentrates. A roentgenogram of the chest revealed a minimal infiltration in the first anterior left intercostal space and a pleural effusion on the right. Pleural fluid, sputum, and gastric cultures later returned negative.

On May 3, 1954, thoracentesis yielded 200 cc. of frankly bloody serous fluid. In view of the inability to establish a definite diagnosis and the suspicion of malignant disease excited by hemorrhagic effusion, pleural biopsy was performed on May 24, 1954. This was done through the sixth intercostal space in the axillary line. The pathological report revealed the specimen to consist of an irregular portion of parietal pleura (about 2 by 1 by 1 cm.) composed of moderately dense gray-white to gray-pink tissue, cutting with somewhat increased resistance. Microscopically (fig. 1) the pleura was greatly thickened. The inner aspect showed a narrow pyogenic membrane, with fibroblasts and epithelioid cells. Beyond this was a zone of granulation tissue that was composed of epithelioid cells, lymphocytes, occasional polymorphonuclear leukocytes, and many large Langhans' giant cells. Present in the connective tissue zone were several discrete foci. One of these foci had an inner area of caseous necrosis. Beyond this, and making up the remainder of this focus, was a wide zone composed of loose collections of collagen fibrils and epithelioid cells (many of which were arranged in a radial fashion), many Langhans' giant cells, lymphocytes, and fibroblasts. Several similar foci were present within the connective tissue zone, but without caseation. Diagnoses were made of (1) caseous tuberculous pleuritis, (2) advanced fibrous thickening of parietal pleura, and (3) fusion of parietal and chest wall. Postoperatively, therapy was started with streptomycin, 1 gm. twice weekly, and *p*-aminosalicylic acid, 12 gm. daily. The postoperative course has been uneventful.

In view of this patient's age, lack of bacteriological diagnosis, and hemorrhagic effusion, the possibility of malignant disease was seriously entertained. It was primarily for this reason that pleural biopsy was performed, and it was of definitive value in indicating the exact etiology and appropriate treatment.

Case 2.—A 32-year-old white man was admitted to the hospital on Dec. 22, 1953, because of chest pain of five weeks' duration. He was in good health until five weeks before admission, when he suddenly developed right-sided chest pain that was crushing in character and intermittent. This severe acute pain subsided, followed by a constant dull aching sensation. He was seen at a Veterans Administration regional office, where a roentgenogram was found normal, and he was given medication. Ten days before admission, there was sudden onset of night sweats; four days before admission, the patient returned to the regional office, where a roentgenogram showed haziness in the

left side of the chest, and hospitalization was advised. On admission, the patient was free of complaints except for slight pain in the right side of the chest that was aggravated by coughing. There was no dyspnea or weight loss. Medical history was noncontributory. The patient's wife had had two episodes of hospitalization for tuberculosis, leaving a sanatorium in April, 1953.

Patient was a well-developed, well-nourished white male, not acutely ill. His temperature was 99 F, pulse rate 72 per minute, respiration 16 per minute, and blood pressure 118/70 mm. Hg. Physical examination showed slight bilateral nasal obstruction. The chest showed dulness, decreased fremitus, and diminished breath sounds in the lower two-thirds of the right side of the chest posteriorly and laterally, with a few fine rales in the right midaxillary line. The remainder of the chest was clear. Hemogram, serology, blood urea nitrogen, cephalin flocculation, and urinalysis were normal. Roentgenograms on Nov. 23, 1953, showed minimal blunting of the right costophrenic sinus and, on Dec. 26, 1953, right pleural effusion involving the lower third of the chest.

On Dec. 28, 1953, thoracentesis was done; clear, amber fluid was obtained, with a specific gravity of 1.020 and a total protein level of 3 gm. per 100 cc. Microscopic examination of this fluid revealed many dense collections of lymphocytes, histiocytes, and occasional neutrophils and eosinophils. No tubercle bacilli could be found on smears. The cytological findings were interpreted as highly suspicious of lymphoblastoma, and pleural biopsy was therefore done. Microscopic examination (fig. 2) of a specimen consisting of both parietal and visceral pleura showed numerous rounded foci, measuring 3 to 4 mm. in diameter, within the stroma. These were composed of elongated cells arranged in whorls, with pink fibrillar cytoplasm and spindle or fusiform-shaped nuclei. Within the foci, generally centrally located, were one or more enlarged multinucleated giant cells of the Langhans' type. In some of the foci, central caseous necrosis of varying extent was present. A moderate number of lymphocytes, epithelioid cells, and nuclear fragments were interspersed among the collagen fibers, which were most numerous and prevalent in the peripheral aspects of these foci. Diagnoses were made of (1) tuberculosis of the pleura with encapsulated caseous foci in parietal pleura, and (2) fibrinopurulent exudate (pleural fluid). The patient had an uneventful postoperative course, with almost no morbidity. Long-term treatment with streptomycin and *p*-aminosalicylic acid was instituted promptly. Serial roentgenograms showed gradual clearing of the pleural fluid on the right, after a slight increase postoperatively. The patient's course during the ensuing eight months was without any bacteriological confirmation of the diagnosis of tuberculosis, despite repeated smears and cultures of sputum and gastric contents. Culture of pleural fluid was negative for tubercle bacilli.

In this case, the cytological report on the pleural fluid was strongly suspicious of lymphoblastoma. Pleural biopsy definitely established the diagnosis and delineated proper management.

CASE 3.—A 26-year-old Negro man was in good health until June, 1953, when he noted the onset of pain in the left side of the chest associated with sweat, fatigue, and chill. He was admitted to a local hospital on Aug. 11, 1953, and pleurisy with effusion on the left was discovered. He was treated with bed rest, aspiration, and oxytetracycline (Terramycin) orally. While at this hospital, his sputums were negative for acid-fast bacilli. Pleural fluid was negative for acid-fast bacilli and pyogenic organisms, although it was blood-tinged and had the characteristics of an exudate. Gastric washings were negative for acid-fast bacilli on concentrate. A tuberculin skin test was positive. A roentgenogram revealed fluid in the left pleura that had essentially disappeared by September, 1953. The patient was considered to have a tuberculous pleurisy with effusion, and, in view of the essentially negative studies, was transferred to this hospital Oct. 2, 1953. At the time of admission, the patient felt well and offered no complaints. There was a slight cough and scant expectoration, with some tightness of the left side of the chest. Medical history and system review were noncontributory.

The patient was a well-developed, well-nourished Negro man showing no cyanosis, dyspnea, or orthopnea. Temperature was 99 F, pulse rate 80 per minute, and blood pressure 110/60 mm. Hg. Complete physical examination revealed no abnormal findings. Routine laboratory work on admission and throughout the patient's course in the hospital, including complete blood cell counts, sedimentation rates, urinalyses, and serology, was within normal limits. Numerous sputum and gastric concentrates were negative to both smear and culture throughout his hospital course, with the exception of two positive cultures of sputum concentrates on specimens of Oct. 6, 1953, and Nov. 23, 1953, which returned postoperatively. Three consecutive urine cultures were negative for tubercle bacilli. Initial chest x-ray showed no abnormalities other than elevation of the left dome of the diaphragm with adherence to the lateral chest wall and a costophrenic sulcus obliterated by adhesions. That some of this represented residual pleural fluid was shown by the fact that further clearing occurred before this patient was ultimately discharged. Despite the negative bacteriological findings at the previous hospital and initially at this hospital, chemotherapy with streptomycin, 1 gm. twice weekly, and *p*-aminosalicylic acid,

Fig. 2.—A narrow necrotic zone (case 2) encircled by granulation tissue containing typical Langhans' giant cells.

12 gm. daily, was started Oct. 12, 1953, on the supposition that the patient had a disease of tuberculous etiology.

In view of the fact that a definite diagnosis was not yet available, pleural biopsy was done Nov. 30, 1953, without difficulty or postoperative complications. At operation, the parietal pleura was found studded with minute pinhead-sized nodules of opaque gray material resembling tubercles. The pathological specimen consisted of a roughly rectangular portion of pleura, measuring 4 by 2.5 cm. and studded with several smooth, slightly elevated, oval and round foci that were gray-yellow and measured from 1 to 3 mm. in their greatest diameter. Microscopic examination (fig. 3) showed that within this pleura were small and moderate-sized oval and round foci. These foci varied in size and shape and were arranged singly or in contiguous groups. They were composed of concentrically arranged collagen fibrils containing lymphocytes, fibroblasts, histiocytes, epithelioid cells, and, in the periphery, multinucleated giant cells (foreign body and Langhans' type). Diagnosis was made of epithelioid giant cell tubercles compatible with a diagnosis of tuberculosis.

In this case, pleural biopsy confirmed the clinical diagnosis and, in accordance with current concepts of treatment, indicated a prolonged course of chemotherapy.

CASE 4.—A 23-year-old white man was apparently well until September, 1953, when there was onset of cough and fever. Three weeks later he was admitted to an Army hospital in England, with anorexia, chills, and fever. A roentgenogram revealed a pleural effusion on the left. Thoracentesis done Sept. 23, 1953, and Sept. 30, 1953, revealed straw-colored clear fluid. In November, 1953, he was transferred to a Navy hospital in the United States. Here, because of a single positive sputum culture obtained on Nov. 17, 1953, he was given streptomycin and *p*-aminosalicylic acid in December, 1953. Three subsequent gastric cultures, two sputum cultures, and cultures of bronchial aspirate were negative for tubercle bacilli. He became afebrile Nov. 25, 1953, and remained so until transferred to this hospital on March 5, 1954. A 20 lb. (9.1 kg.) weight gain had occurred during his previous hospitalizations. Neither conventional roentgenograms nor tomograms revealed a parenchymal lesion.

There was dulness to flatness over the left lower lung field, especially anteriorly, with absent breath sounds over this area. No other abnormalities were noted. Urinalysis, serology, and hemogram were normal. Many cultures of gastric contents, sputum, and urine showed no growth. A roentgenogram, on admission, showed a homogenous density superimposed over the lower half of the left lung field, obscuring the left leaf of the diaphragm and extending up the lateral chest wall, enveloping the lateral half of the entire lung field up to the apical region.

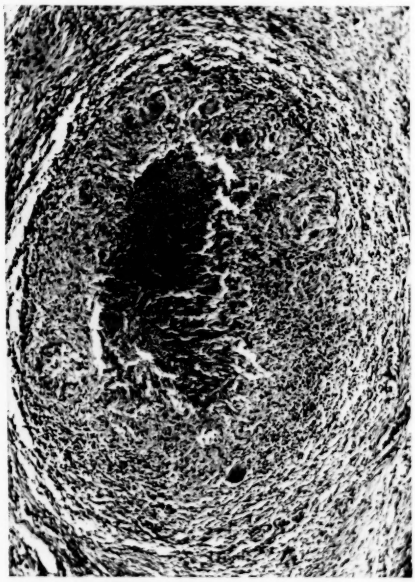

Fig. 3.—Tuberculous focus (case 3) with central necrotic zone encircled by wide area of granulation tissue.

The parenchyma underlying this density could not be delineated. The right lung field, right leaf of the diaphragm, and thoracic cage were all normally outlined. Tomograms did not give any additional information.

The patient was maintained with streptomycin and *p*-aminosalicylic acid therapy. There seemed to be slight resolution of the left pleural effusion, in comparison with roentgenograms taken at the naval hospital. An attempt at thoracentesis at two sites yielded no fluid but a sensation of thickened pleura. Pulmonary function studies revealed an abnormality of ventilation that was in keeping with the immobility of the left leaf of the diaphragm and chest wall. Because of failure to resolve this over a period of nine months (including six months of specific therapy), the possibility of nontuberculous etiology was seriously

Fig. 4.—Tuberculous granulation tissue (case 4) showing advanced collagenization. A Langhans' giant cell is still present.

considered and thoracotomy done June 9, 1954. A thickened pleura and a trapped left lung were found, and a decortication of the left lung was performed. Pathological examination revealed one surface of the pleura to be smooth, glistening, and pink to reddish-brown in color; the other surface had a shaggy, edematous appearance. Microscopic sections showed multiple small and moderate-sized, oval and round foci within the stroma of loosely arranged lymphocytes, fibroblasts, epithelioid cells, and an occasional Langhans' giant cell. An occasional similar focus contained a pink granular zone of necrosis. Diagnosis was made of tuberculosis of the parietal pleura and left endothoracic fascia.

In this case, the clinical diagnosis of tuberculous pleural effusion was seriously questioned because of failure of the condition to clear during many months of bed rest and chemotherapy. Thoracotomy was decided upon both to decorticate a trapped, functionless lung and to make a definite diagnosis. It is of interest to note that the pleura still showed marked evidence of tuberculosis nine months after the onset of illness, six months after specific combined chemotherapy, and many months after the disappearance of free fluid.

CASE 5.—A 23-year-old white male veteran was admitted to the hospital on Aug. 20, 1953, with a diagnosis of tuberculous pleurisy with effusion. The patient was well until December, 1952, when he developed pain in the left flank and chest, with

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chills and fever. According to the history, a chest roentgenogram in January, 1953, showed "pleurisy"; he was returned to duty, but, on March 16, 1953, a routine premarital chest roentgenogram showed pleural effusion on the left side with an infiltrate in the left lung field. The patient was admitted to an Army hospital overseas, where he was treated with bed rest and thoracenteses. He did not receive chemotherapy. He was admitted to this hospital Aug. 20, 1953. His sputum had been persistently negative on numerous smears and cultures. Tuberculin test was positive. History was irrelevant.

The patient was a well-developed, well-nourished white man with no cyanosis, dyspnea, clubbing, or cough. Temperature was 98.6 F, pulse rate 80 per minute, respiration 16 per minute, and blood pressure 130/90 mm. Hg. The chest was normal in size, shape, and expansion. The left lung showed dulness, with diminished breath sounds at the base. No rales were heard. Otherwise, physical examination was normal. Routine laboratory work on admission and throughout the patient's course at this hospital, including complete blood cell count, urinalysis, serology, cephalin flocculation test, and determination of sedimentation rate, was all within normal limits. Numerous smears and cultures of sputum and gastric concentrates were all negative for acid-fast bacilli. A review of the patient's roentgenograms, including those taken in the Navy, showed the following findings. The film of Jan. 9, 1953, revealed an infiltrate in the left second anterior intercostal space. The film of March, 1953, showed a left pleural effusion that slowly resolved and showed complete resolution by the last Navy film of July 26, 1953. Roentgenograms taken in this hospital revealed the persistence of a residual lesion in the superior segment of the left lower lobe. Tomograms in anteroposterior and lateral projections strongly suggested this lesion to be a residual inspissated cavity.

Streptomycin and isoniazid therapy was started Oct. 1, 1953, and, on Nov. 16, 1953, resection of the superior segment of the left lower lobe was performed. At the same time, a decortication of the visceral pleura, which was studded with many tubercles, was done. Microscopic examination (fig. 5) revealed that the visceral pleura was moderately and irregularly thickened by an increase in loose and dense connective tissue and contained within it moderate-sized oval and round foci that were well delimited from the surrounding tissues. These foci were composed of concentrically arranged hyalinized connective tissue containing lymphocytes, fibroblasts, epithelioid cells, and an occasional Langhans' giant cell. Diagnoses were made of (1) pulmonary tuberculosis involving the superior segment of the left lower lobe, with moderate healing changes, cavitation, encapsulated caseous foci, moderate pulmonary fibrosis, and slight emphysema, and (2) fibrous thickening of the pleura with healing tubercles.

In this case, a pleural specimen was obtained during a resection. Again, considerable pathology accompanied an apparently uncomplicated effusion. Many tubercles were still present on the visceral pleura six months after the pleural effusion had completely resorbed.

COMMENT

The only reference found that related to pleural biopsy in pleural effusion was that of Sutliff and others.[6] They took biopsy specimens in 22 patients, 17 of whom were tuberculous; the others had different entities. "The predominant histopathological findings in these 17 cases were: fibrosis and giant cells in all, tubercle formation in 12 cases, and caseation in 10 cases." These results are in accord with our own. The rather surprising pathological findings of multiple pleural tubercles and/or caseation in these cases casts doubts on the validity of previously accepted etiological concepts of tuberculous effusion. It has been the feeling of most authorities that tuberculous pleural effusion, while always associated with a subpleural lesion (pulmonary or lymph node), nevertheless was basically a manifestation of an allergic nature rather than directly infective. Rich [7] states that: "Since large serous effusions do not occur in the experimental animal or the human being as an immediate result of hematogenous infection, but can be produced experimentally by the introduction of a sufficiently large number of bacilli directly into the cavity of the hypersensitive body, it seems clear that the tuberculous effusions in the human being must have their origin in the discharge of bacilli into the cavity from an adjacent tuberculous lesion." And again: "Extensive inflammatory exudation occurs only in the presence of hypersensitivity."

Miller [8] describes the pathology of tuberculous effusion as being an allergic process: "The mesothelial covering undergoes degenerative changes and desquamation, and the pleural surfaces become coated with a more or less dense layer of fibrin. Subjacent layers become infiltrated with lymphocytes and fibrin, and the underlying lung becomes implicated in the inflammatory process to a greater or less degree. The intensity of the allergic phenomena results in the pouring out of an abundant exudate, through the highly permeable pleura, which gradually ceases with the subsidence of the inflammatory reaction. The coincident coating of the pleura with fibrin and the damage sustained by the pleura retards the process of absorption." Lindskog and Liebow [9] state, "Variable numbers of tubercles may be seen on these membranes but usually they are few as are the demonstrable bacilli."

Fig. 5.—Epithelioid giant cell tubercles (case 5) within the thickened pleura.

7. Rich, A. R.: The Pathogenesis of Tuberculosis, ed. 2, Springfield, Ill., Charles C Thomas, Publisher, 1951, p. 895.

8. Miller, O. O.: Tuberculosis of the Pleura, in Clinical Tuberculosis, Goldberg, B., editor, Philadelphia, F. A. Davis Company, 1946, vol. 2, pp. G-33–G-54.

9. Lindskog, G. E., and Liebow, A. A.: Thoracic Surgery and Related Pathology, New York, Appleton-Century-Crofts, Inc., 1953.

The demonstration here of multiple tubercles in the pleura of patients with tuberculous effusion would tend to indicate that direct pleural involvement in tuberculous pleural effusion is far more extensive than previously believed. Schuman [10] cites Jacobeus as noting multiple pleural tubercles in patients with effusion who were examined by thoracoscopy. Auerbach,[11] in a careful study of tuberculous serous effusions at autopsy, reported 103 cases with pleural effusion (55 with only serous manifestation of tuberculosis and 48 combined with other serous involvements). Cases of effusion secondary to artificial pneumothorax were excluded, but those with definite pulmonary tuberculosis were not. Thirty-five cases were felt to represent direct spread from the lung (25 from chronic pulmonary lesions and 10 from primary complexes). Two cases developed from diseased ribs and five from the peritoneum. Forty-six cases were found to be manifestations of hematogenous dissemination. Fifteen cases showed isolated pleural tuberculosis. In all of these the tracheobronchial lymph nodes were enlarged. The pathology was significantly extensive in these cases, with two types represented about equally; these were miliary tubercles and caseous pleuritis. In all these cases, the pleural pathology appeared sufficient to cause changes warranting the amount of effusion noted. The pleural biopsy cases presented here make this point even stronger, because, clinically, they were of comparatively minor severity. Therefore, it is our feeling that sensitivity phenomena play a far smaller role than previously considered. These facts would be in keeping with the current tendency toward prolonged treatment of tuberculous pleural effusion with both bed rest and chemotherapy.

SUMMARY AND CONCLUSIONS

Pleural biopsy was done in five cases in which the etiology of the pleural effusion could not be established by bacteriological methods. The findings of a surprisingly large amount of tuberculous pathology in these cases casts doubt on the validity of previously accepted concepts of etiology. Pleural biopsy is a minor procedure in the hands of experienced thoracic surgeons. Its routine use is recommended for the diagnosis of pleural effusions of undetermined etiology.

Tremont Avenue and Center Street (Dr. Small).

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PATHOGENESIS OF CORONARY DISEASE IN AMERICAN SOLDIERS KILLED IN KOREA

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and
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Recently we [1] presented a paper describing the gross lesions found in the coronary arteries of American soldiers killed in Korea. This series consisted of 300 men with an average age of 22.1 years. In 77.3% of the cases some gross evidence of coronary disease was demonstrated that varied from minimal eccentric thickening to complete occlusion of one or more of the main coronary branches (fig. 1*A*). The locations of the lesions indicated that the hemodynamics of the coronary circulation, as modified by the variations of the coronary arterial tree, is one of the factors in coronary disease (fig. 1*C* and *D*). The purpose of this paper is to present all available clinical data concerning the cases studied and to discuss the histopathology of the lesions.

MATERIAL

All the clinical data were obtained from photostatic copies of the induction physical examinations or were taken from the emergency medical tags. At the present time, some 200 records have been received. The coronary arteries were sectioned in a horizontal or longitudinal plane through obviously diseased areas and other areas that were not involved in the disease process. These sections were embedded in paraffin, sectioned at about 7 μ and stained with hematoxylin and eosin, Masson's trichrome, Weigert's resorcinol-fuchsin elastica, and Rinehart's mucopolysaccharide. Frozen sections for lipids were stained with oil red O.

CLINICAL DATA

It was estimated that the average age of the 200 men on whom complete records have been received was 22.1 years, average height 5 ft. 7¾ in. (171 cm.) and average weight 145.8 lb. (66 kg.). No definite statements can be made concerning body build or weight in that somatotyping was not done at the time of the autopsies. Further, the majority of the induction physical examinations do not state whether the examinee wore shoes at the time his height and weight were recorded. The data do indicate, however, that severe coronary disease is not confined to the older men in our series. For example, in 20 cases with lesions causing over 50% luminal narrowing the average age was found to be 22.6 years (see table). Furthermore, there is no evidence that hypertension played a role in this disease process.

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Dr. Tamaki Imai, Professor of Pathology, Kyushu University Medical School, Kyushu, Japan, and Dr. Hiroshi Sasamoto, Assistant Professor of Medicine, Keio University School of Medicine, Tokyo, Japan, the Tokyo Medical Examiners Office, and Lieut. Col. James C. Hansen, 406th Medical General Laboratory, supplied materials for this study.

The illustrations were supplied by the Armed Forces Institute of Pathology, Washington 25, D. C.

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PATHOLOGICAL OBSERVATIONS

As Moon and Rinehart [2] pointed out, the earliest lesions were composed of a subendothelial proliferation of fibroblasts and a deposition of mucoid ground substance. Slight increases in thickness of the intima were usually accompanied by fragmentation of the internal elastic membrane and not infrequently by herniation of the intimal elements into the media. Accompanying eccentric intimal thickening or plaque formation was the appearance of phagocytized sudanophilic lipid material in the intima. The lipid was found in globular macrophages and in spindle-shaped mesenchymal cells. The internal elastic membrane of the main branches of the coronary arteries in all cases was split and concentrated in two distinct layers with numerous connecting fibers. The inner one usually was mantled in sudanophilic lipid material (fig. 2*C* and *D*). Both layers exhibited fragmentation and reduplication in areas where there was eccentric intimal thickening. As the plaque increased in thickness due to fibroblastic proliferation, increased accumulation of mucoid ground substance, formation of collagen fibers, and accumulation of lipid, the phagocytes at the base of the plaque degenerated, spilling lipid into the parenchyma of the plaque. This resulted in the appearance of acellular areas with cholesterol slits and patches of intimal calcification. The media under such foci usually was atrophic and often was traversed by small vessels from the adventitia, which supplied the base of the plaque (fig. 2*B*). In some instances the lipid extended well into the media. The cellular elements in large plaques consisted of fibroblasts, phagocytes, and a scattering of mononuclear cells. In one case chronic inflammatory cells were encountered about the adventitial vessels at the base of a plaque.

Lesions Causing More Than Fifty Per Cent Luminal Narrowing in American Soldiers Killed in Action

Age	Race	Height, In.	Weight, Lb.	Blood Pressure, Mm. Hg	Pulse Rate, Per Min.	Luminal Narrowing, %
21	W	62¾	124	110/72	84	100
21	W	69	114	120/80	76	100
22	W	66½	155	140/85	76	98
20	W	67¾	183	120/80	86	98
40	W	64	156	130/80	80	98
21	W	69	174	116/70	72	98
44	W	70¾	171	146/86	86	98
22	N	64	123	110/70	84	95
22	W	67½	165	120/75	90	90
19	W	63¾	120	128/84	84	90
19	W	71	176	124/68	78	85
21	W	67½	145	142/80	90	80
21	W	66½	185	145/70	96	80
20	W	71½	160	118/72	78	70
22	W	65	136	120/70	84	70
19	W	70	148	140/80	78	60
21	W	73	162	138/78	84	60
18	W	69	165	122/70	81	50
19	W	67	120	120/76	72	50
20	W	69	171	136/70	78	50
Average	—	67.2	152.6	—	—	—
	22.6					

COMMENT

The factor of stress on the intima resulting from the hemodynamics of the coronary circulation as modified by anatomic variations in the coronary tree has been mentioned by many investigators [3] as one of the main factors of plaque formation. It is postulated that stress on the intima causes fibroblastic proliferation and the deposition of the mucoid ground substance. Another factor of importance in the production of the lesions appears to be the phagocytosis of certain plasma lipids within the traumatized intima. Geiringer [4] has pointed out that the normal intima is an avascular structure nourished by a transendothelial filtrate. Weinhouse and Hirsch [5] have shown that there is a close relationship between the lipid extracts of the plasma and those of the intima. Wilens,[6] using human autopsy material, has demonstrated experi-

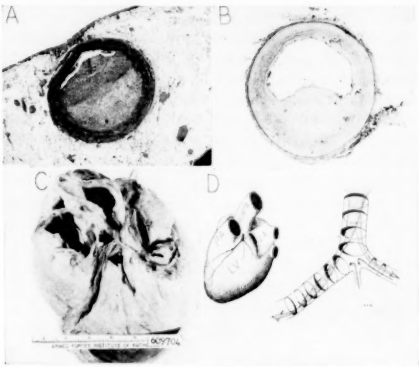

Fig. 1.—*A*, cross section through anterior descending artery of a 22-year-old white man killed by penetrating shell fragment wound of the head. A large plaque almost completely occludes the vessel (Masson stain). × 7.6. *B*, cross section through anterior descending artery of a 22-year-old Japanese man, revealing a large plaque. No evidence of lipid phagocytosis in the stroma of the plaque (oil red O stain). × 4.3. *C*, epicardial wall of the vessels has been dissected away, revealing spiral plaque formation in the left, anterior descending, and circumflex arteries. *D*, schematic drawing from specimen in *C*. Stippled arrows indicate spiral flow of blood; black arrows, regurgitation at points of bifurcation. Thickened portions of ellipses represent the sites of stress and plaque formation.

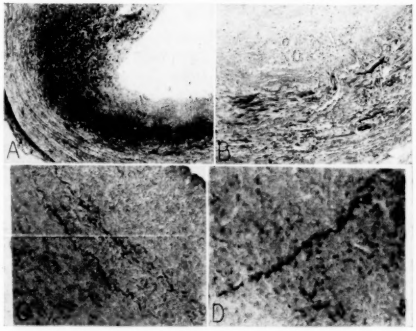

Fig. 2.—*A*, phagocytosis of lipids in plaque. Deposition of lipids on elastica outside of plaque. Note the absence of phagocytosis in this area (Gomori's aldehyde fuchsin stain and oil red O). × 40.3. *B*, adventitial vessels traversing the media to nourish the plaque. × 99. *C*, a double internal elastic membrane. The inner layer is mantled with sudanophilic lipid material (oil red O). × 99. *D*, lipids on inner layer of the internal elastic membrane (oil red O). × 99.

2. Moon, H. D., and Rinehart, J. F.: Histogenesis of Coronary Arteriosclerosis, Circulation **6**: 481-488, 1952.

mentally that the amount of lipid deposited in the intima depends to some extent on the thickness of the intima. The histological characteristics of the lesions in our series of cases were compatible with these experimental findings, for with plaque formation it appears that certain plasma lipids are trapped in the stroma of the plaque and are phagocytized, thus aggravating the disease process. The presence of lipids on the inner layer of the internal elastic membrane beneath the intima, where there is no eccentric intimal thickening or plaque formation, indicates that the lipids of the transendothelial filtrate have successfully traversed the intimal stroma. Some are deposited on or are filtered out by the elastica, but this does not incite phagocytosis (fig. 2*A*).

It is of interest to compare the lesions found in the American soldiers with the lesions found in a small series of Japanese natives now being studied. At the time of this presentation, material from 114 cases representing both sexes has been examined. Of this group 30 are males approximating the age group of the United States soldiers. The incidence of clinical coronary disease is low in Japan. For example, 2,550 native Japanese representing all ages were recently examined at a clinic in Japan, and in only 1.7% of the cases were the electrocardiographic findings suggestive of coronary disease. During a five year period, there were 1,480 medical examiners' cases in a Japanese city with a population of approximately 2 million and only 14 cases were coded as coronary deaths. In the studies now being conducted, lesions have been found in over 65%. The plaques are located at points of stress, just as in the American series. There are two main differences in the Japanese series as compared to the American series. 1. No plaques causing over 50% luminal narrowing have been found in young males (20 to 30 years). 2. The amount of phagocytized lipids in the stroma of the plaques was far less than that observed in the American series (fig. 1*B*). Sudanophilic material was present within the stroma of most cases, but it was extracellular. These findings indicate that plasma lipids of the type that are phagocytized in the plaques, aggravating the disease process in the Americans, probably are less abundant in the plasma of the Japanese. This suggests diet as the source of the lipids.

Thus far no mention has been made of the hormonal factor in atherosclerotic coronary disease. In this connection a case recently observed by one of us (W. F. E.) may be pertinent. The patient was a 40-year-old woman who was lactating at the time of her death. Histological studies revealed large amounts of fine sudanophilic material distributed throughout the intima and inner portion of the media of the coronary arteries, but the evidence of phagocytosis of lipids was minimal. Katz and Stamler [7] point out that spontaneous lipid infiltration of the elastic aorta of a chicken occurs during the egg-laying period, but there is little evidence of phagocytosis. Here, then, are two conditions marked by physiological hyperlipemia and lipid infiltration of the arterial wall without much evidence of phagocytosis. This phenomenon may be related to the size of the lipoprotein aggregates investigated by Hirsch and Weinhouse.[8] In their opinion the larger aggregates stimulate phagocytosis. We postulate that this phenomenon hastens and aggravates the coronary disease process. It is conceivable that the sex hormones influence the size of the lipoprotein aggregates, thus accounting for the sex difference in this disease.

SUMMARY

The gross and microscopic studies of the coronary arteries of Americans killed in action in Korea indicate that the coronary lesions are due in part to intravascular stress caused by the hemodynamics of the coronary circulation as modified by anatomic factors. The stress results in subendothelial fibroblastic proliferation, deposition of a mucoid ground substance, and fragmentation of the internal elastic membrane. The accumulation and phagocytosis of certain plasma lipids in the plaques aggravates and hastens the disease process. The amount and the distribution of the lipids on the elastica and within the parenchyma of the plaques found in the Americans as compared to the Japanese indicate that certain plasma lipids as modified by diet are another important agent in the development of coronary disease in young males.

16th Street and North Edison (Dr. Enos).

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Coarctation of the Aorta.—Prior to the advent of definitive vascular surgery the improvement in the diagnosis of coarctation of the aorta was of academic interest only. The outlook for these patients was radically changed by the introduction of these surgical techniques, and coarctation of the aorta now may be listed among the few forms of hypertension and of congenital heart disease that are potentially curable. Following successful resection of a narrowed aortic segment, the majority of the usual causes of death in such patients—i. e., rupture of the aorta, cardiac failure, cerebral hemorrhage, or thrombosis—are made unlikely. Bacterial endarteritis and cardiac insufficiency secondary to associated congenital cardiac lesions are potential complications little altered by operation. The diagnosis still depends upon adequate physical examination. Refinements in diagnostic technique such as ballistocardiography, angiocardiography, oscillometry, et cetera, serve only to delineate the degree of aortic obstruction. Occasionally the alert roentgenologist will note rib notching and a small aortic knob, and direct attention to the correct diagnosis. Careful examination of the peripheral vascular system is the rule in elderly patients because of the stress placed on vascular changes in diabetes mellitus and arteriosclerosis. Similarly, the pediatrician has made such an examination a routine part of the postnatal evaluation of each newborn infant. . . . The clinical picture can be variable, but a common denominator was *decreased* arterial pressure in the lower extremities. Palpation of the peripheral arterial system in all patients must be the rule if the condition is to be recognized.—Capt. L. L. Bean and Lieut. D. B. Carmichael, (MC), U. S. N., Coarctation of the Aorta, *United States Armed Forces Medical Journal*, May, 1955.

VENTRICULOPLASTY: EXCISION OF MYOCARDIAL ANEURYSM

REPORT OF A SUCCESSFUL CASE

William Likoff, M.D.
and
Charles P. Bailey, M.D., Philadelphia

Although aneurysm of the ventricle was recognized as early as 1757 by Hunter,[1] it was not until the turn of the 20th century that its relationship to coronary occlusion and to myocardial infarction was fully understood.[2] Sternberg [3] has expressed his views on the pathogenesis and symptomatology, which since have formed the basis for our modern concepts regarding cardiac aneurysm. He was the first to recognize the lesion during life by means of physical and auscultatory signs that remain useful currently. Myocardial aneurysms may result from congenital defects, trauma, and syphilis. The vast majority, however, develop following the myomalacia of myocardial infarction. They are, therefore, incidental to arteriosclerotic or atheromatous cardiovascular disease and represent an unfortunate local complication of a generalized process. The earlier statistical reviews imply that ventricular aneurysm is an exceptional finding in the total autopsy population.[4] In true perspective, however, it is an entity of considerable frequency, since its incidence varies from 5 to 38% in patients with coronary occlusion and myocardial infarction.[5] The recent review by Schlicter, Hellerstein, and Katz reveals a 20% incidence in 512 patients with myocardial infarction who came to autopsy.[6] If, as Master [7] has estimated, the incidence of acute myocardial infarction is from 500,000 to 1 million annually in the United States, there must be between 25,000 and 200,000 new cases of ventricular aneurysm developing annually in this country.

From an anatomic standpoint, the apex of the heart is involved in over half of the cases, with the anterior wall of the left ventricle the most common site. The location actually is determined by the coronary vessel involved, the site of its luminal occlusion, the extent of the resulting myocardial infarction, and the specific vascular pattern of coronary distribution in that individual. In contrast, certain physical features of the aneurysm are related to the stage of the myocardial infarction at the time the lesion develops. When an aneurysm occurs in the early acute stage of a myocardial infarction, it is diffuse and forms a sac or pouch that is a true part of the ventricular cavity. Such a lesion is generally large and is demarcated from the cardiac chamber by a wall that, although thinner than the adjacent myocardium, often contains muscular elements. Aneurysms developing during the chronic stage of myocardial infarction are more apt to communicate with the ventricular cavity by means of a small orifice and are identified further by the presence of extremely thin walls consisting mainly of scar tissue. In either type, the size of the sac varies greatly, and the pouch may contain organized clot that in some cases becomes calcified.

SIGNS AND SYMPTOMS

Many physical findings have been considered suggestive, if not diagnostic, of ventricular aneurysm, and of these the presence of gallop rhythm associated with a dull first sound and the unexpected appearance of a systolic or a systolic and diastolic murmur at the apex of the heart after myocardial infarction are the most helpful. However, none of these recognized signs or symptoms is actually pathognomonic of the lesion. Roentgenologic examination has proved extremely helpful in establishing a diagnosis, particularly when the enlarged cardiac silhouette can be demonstrated with its contour deformed by a localized bulge that cannot be visually differentiated from the basic heart shadow. This finding becomes strikingly suggestive when the area of abnormal dilatation can be seen to pulsate paradoxically or not at all. Both roentgenkymography and electrokymography are excellent methods of graphically recording the paradoxical systolic expansion and diastolic collapse of an aneurysm. Unfortunately there is no characteristic electrocardiographic pattern. In the vast majority of instances, the abnormalities are those that indicate the existence of the old myocardial infarction that has been responsible initially for the development of the aneurysm.

From a clinical standpoint, a patient with ventricular aneurysm may remain relatively well and follow a course similar to those who have recovered from a myocardial infarction without a serious complication. This asymptomatic course, however, is observed in less than half of the patients.[6] Generally, the clinical picture is characterized by persistence of the pain of coronary insufficiency, by the development of intractable heart failure, and by a tendency toward embolic issue and sudden death. Although a long survival period is possible in these cases, it is extremely unlikely. Three-fourths of the patients succumb within three years and 88% within five years, a mortality rate that contrasts most unfavorably with that to be expected in infarction without aneurysm.[8]

The pathological report was prepared by J. E. Imbriglia.

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Death results from a new myocardial infarction, congestive cardiac failure, thromboembolic episodes, or a combination of these events. Spontaneous rupture rarely occurs.[9] In all likelihood the short survival period precludes dilatation and thinning out of the myocardium to the point of actual rupture.

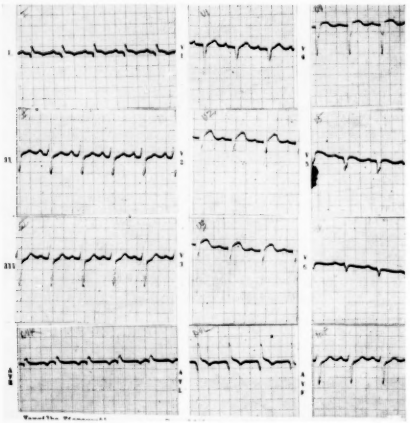

Fig. 1.—Preoperative electrocardiographic studies on 54-year-old white male who had suffered anterior wall myocardial infarction 15 months previously.

DELETERIOUS EFFECTS

The nature of the clinical manifestations during the symptomatic phase of cardiac aneurysm and the mode or manner of death, except when it results from continuing coronary insufficiency or from another episode of acute myocardial infarction, suggest that the useless bulge in the wall of the ventricle is responsible for definite pathophysiological effects, which would be avoided if the lesion were eliminated. In this regard, the high incidence of congestive heart failure, the frequency of mural thrombosis, and the subsequent thromboembolic phenomena are particularly noteworthy. Schlichter and co-workers [6] have shown an incidence of mural thrombosis within the aneurysmal sac of 53.9%. This was more than twice the incidence of such thrombosis accompanying simple myocardial infarction (21.2%). Thromboembolic phenomena were prominent in 35% of their cases and were considered the main cause of death in 21.7%. They reported a 70% incidence of congestive heart failure in their series and considered this to be the main cause of death in 48.1% of the group. It is readily apparent, therefore, that an aneurysm of the left ventricle is not merely an interesting anatomic anomaly encountered in the course of coronary artery disease but a complication of considerable moment and deleterious effect in patients who already suffer from a very serious illness.

Reflection on the probable benefits to be derived from the removal of a ventricular aneurysm first led us to a consideration of a method of operative interference and then to the ultimate successful application of the technique to a patient with the typical findings and sequelae of such a lesion. We are not aware of a previous successful excision of an arteriosclerotic myocardial aneurysm. Beck [10] was the first to undertake definitive surgical treatment for a ventricular aneurysm in 1941. He attempted to reduce the size of such a lesion by suture constriction and plication of its base.

REPORT OF A CASE

A 56-year-old white male was admitted to the thoracic surgigal department of the Hahnemann Medical College and Hospital on April 8, 1954. The patient had suffered an anterior myocardial infarction in January, 1953. The early clinical course was uneventful, except for the persistence of the pain of coronary artery insufficiency and a moderate degree of dyspnea upon exertion. In May, 1953, an acute attack of left ventricular failure occurred. Shortly thereafter, a diagnosis of left ventricular aneurysm was reached by S. A. Levine of Boston on the basis of physical and roentgenographic findings. A cholecystectomy was required in June, 1953, because of calculous cholecystitis, and the patient tolerated the surgery well. Congestive heart failure, marked by extreme dyspnea and peripheral edema, developed in December, 1953, and persisted in mild form until the present hospital admission, in spite of excellent medical care.

At the time of admission the patient was dyspneic and was forced to remain in an upright position in bed to remain comfortable. The blood pressure was 124/80 mm. Hg. Physical examination revealed a regular rhythm with a diastolic gallop and an apical rate of 96 beats per minute. The first mitral sound was normal, although distant, and no murmur was heard over any valve area. A forceful thoracic systolic expansile pulsation over the precordial area in the left midclavicular line extended from the third to the fifth interspace, but no murmur was heard over this area. The examination of the lungs revealed moist rales at the right base posteriorly. The liver was not palpable, but there was a grade 1 dependent edema. In all other respects the physical examination was within normal limits.

Examination of the blood revealed: erythrocytes, 4,200,000 per cubic millimeter; hemoglobin level, 13.6 gm. per 100 cc.; leukocytes, 7,550 per cubic millimeter; neutrophils, 62%; lymphocytes, 32%; monocytes, 5%; and eosinophils, 1%. The urine was normal. The blood sugar level was 92 mg. per 100 cc., and the blood urea nitrogen level 10 mg. per 100 cc. The serum cholesterol level was 220 mg. per 100 cc. The prothrombin time was 90% of normal. The total serum protein value was 6.6 mg. per

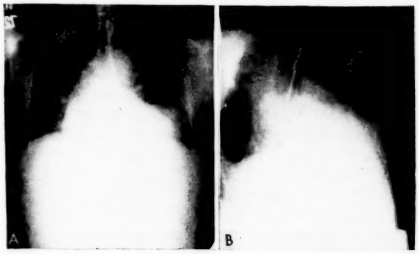

Fig. 2.—*A*, preoperative anteroposterior roentgenogram showing abnormal cardiac outline typical of left ventricular aneurysm. *B*, right anterior oblique roentgenogram.

100 cc., with albumin 3.6 mg. and globulin 3 mg. The blood serologic tests were normal. Bleeding and coagulation times were 1 and 7 minutes respectively. The admission electrocardiogram (fig. 1) revealed normal sinus rhythm. The QRS duration was 0.1 second and the P-R interval was 0.18 second. The RS-T segment was elevated in lead 1, AVL, and in the precordial pattern from V_2 to V_5 inclusive. The T wave was inverted in leads 1, AVL, and V_5 and flat in AVR and V_6. Q waves were present in leads 1

9. Betsch, W. F.: Cardiac Aneurysm with Spontaneous Rupture: Report of Two Cases, Am. Heart J. **30**: 567, 1945.

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and AVL. No R wave was seen from V_1 to V_5 inclusive. These findings were considered indicative of a chronic myocardial infarction involving the anterior surface of the left ventricle. The initial roentgenograms of the heart (fig. 2) revealed a sabot-shaped organ that was enlarged 3+. A ventricular aneurysm was observed on the anterolateral surface of the left ventricle. On the basis of the examination, a diagnosis was reached of

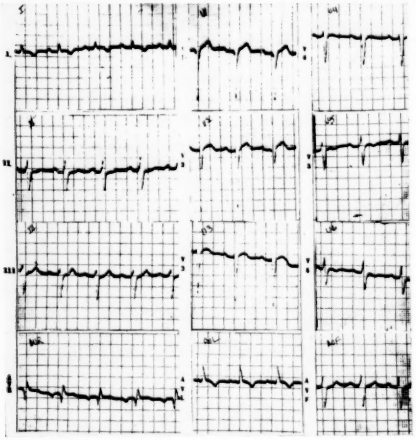

Fig. 3.—Electrocardiographic studies 10 weeks after resection of left ventricular aneurysm. Note evidence of functional improvement, although evidence of old myocardial infarction remains.

arteriosclerotic heart disease, with an old anterior wall myocardial infarction and a left ventricular aneurysm. During the preoperative period the patient was maintained with digoxin, 0.25 mg. orally per day, intermittent subcutaneous injections of mercaptomerin (Thiomerin) sodium, and a salt-poor diet. In spite of this routine, gallop rhythm and dyspnea persisted. Surgery was performed on April 15, 1954, by one of us (C. P. B.).

The patient tolerated surgery exceptionally well. Gallop rhythm disappeared on the first postoperative day, was heard intermittently during the first week, and thereafter was not encountered again. After the immediate postoperative period and the removal of the drainage tubes from the chest, the patient did not require oxygen or any extraordinary measures to maintain cardiac compensation. Bed rest was continued for five weeks, and the patient was observed for an additional seven weeks. During the latter period he was able to perform ordinary activities such as walking and stair-climbing (three flights) without unusual dyspnea or the development of peripheral edema. The pain of coronary artery insufficiency did not recur with the type of exercise that had precipitated angina prior to surgery. Subsequent medical reports indicate that as late as 14 months after surgery the patient has continued to maintain his clinical improvement. The electrocardiographic patterns after surgery revealed a complete disappearance of the Q waves in leads 1 and AVF. The R waves reappeared in leads V_1 to V_6 inclusive. The final electrocardiogram is illustrated in figure 3. The postoperative cardiac silhouette is seen in figure 4.

Operation.—Anesthesia was induced with intravenously given thiopental (Pentothal) sodium and procaine hydrochloride. Oxygen was administered through a cuffed endotracheal catheter. The patient was postured laterally with the left side uppermost. The usual curved parascapular incision was made but was extended anteriorly practically to the sternum and posteriorly to the level of the root of the spine of the scapula. The thoracic muscles were divided in the line of the skin incision. Bleeding points were clamped with fine hemostats and then coagulated with the high-frequency current. The left sixth intercostal space was opened from the bodies of the vertebrae posteriorly to the internal mammary vessels anteriorly. In retrospect it is realized that the fifth intercostal space would have provided a better exposure to the cardiac pathology.

The lung was mobilized and compressed posteriorly, and the pericardium was exposed. The outline of the pericardium was seen to be distorted anterolaterally in the region of a large left ventricle. Upon opening the pericardium, a smooth ovoid bulge was seen arising from the heart, extending from apex to base, and involving the entire anterior wall of the left ventricle. The bulge presented a conical peak toward its basal extremity. This peak and the adjacent portion of the tumor were densely adherent to an overlying, greatly thickened, and remarkably well-vascularized pericardium. The entire mass exhibited paradoxical pulsations, collapsing during ventricular diastole and distending during systole. Palpation of the sac during diastole elicited a semifluctuant sensation. The mass presented no visible surface coronary vessels and seemed to be centrally composed essentially of scar tissue that shaded off diffusely at the base into normal appearing ventricular myocardium. The entire length of the anterior descending branch of the left coronary artery appeared to be reduced to a fibrous cord and was imbedded within scar tissue. The heart beat was visibly rapid and feeble (120 per minute). The blood pressure was 90/65 mm. Hg.

After dissecting the vascular and dense pericardium away from the aneurysm, a large Satinsky aortic clamp was placed so as to span the base of the sac in an apicobasal direction. It was evident immediately that the blades were long enough only to include about two-thirds of the base of the sac. The blades were closed in longitudinal fashion along the line of the apparent junction of the aneurysm with the true ventricular wall, leaving unclamped the portion toward the apex of the ventricle. The heart exhibited no extrasystoles nor other arrhythmia but developed a visibly stronger and slower beat (105 per minute). The systolic blood pressure level increased 20 mm. Hg. It was evident that partial elimination of the aneurysmal sac from free communication with the left ventricular chamber had brought about a significant improvement in the cardiac function.

A heavy silk suture (no. 2 braided) swedged on a large curved Atraumatic needle was passed in continuous mattress fashion below the clamp through the double thickness of apposed left ventricular wall beginning at the cephalic extremity. Each penetrating stitch was placed 1 cc. nearer to the ventricular apex than the previous one. Toward the apex, where no clamp had been applied, placement of the suture line was continued in a similar manner across the unapposed ventricular walls to ex-

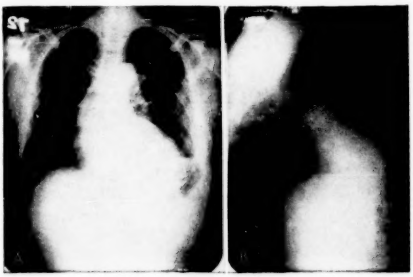

Fig. 4.—*A*, posteroanterior roentgenogram 10 weeks after resection of left ventricular aneurysm. Note reduction in over-all heart size as well as change in contour. *B*, right anterior oblique roentgenogram obtained at same time as *A*.

clude this portion of the base of the aneurysmal sac as well. After completion of the suture line, the two ends of the heavy continuous basting stitch were drawn taut. This had the effect of approximating the partially fibrosed ventricular tissue at the base of the sac in an apicobasal line. A similarly placed interrupted mattress suture was applied at both extremities of the line of myocardial approximation. After tying these sutures,

each was attached securely to the appropriate end of the continuous basting stitch, fixing the latter in position permanently.

A second row of interrupted mattress sutures was applied slightly distal to the first (nearer to the clamp). Each of these also was made 1 cc. in width. The occluding clamp was removed from the heart wall, and the sac progressively was cut away, beginning at the ventricular apex and at a distance of one centimeter from the row of interrupted sutures. As the line

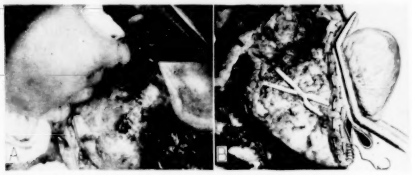

Fig. 5.—Resection of left ventricular aneurysm. *A*, appearance of anterolateral left ventricular aneurysm before commencement of surgery. *B*, artist's drawing superimposed upon photograph of a typical specimen showing representation of surgery.

of excision was extended, the edges of the created myocardial defect were approximated methodically with a continuous running suture, also of no. 2 braided silk on a curved Atraumatic needle (fig. 5*A* and *B* and fig. 6). In the upper one-third of the suture line, well-attached, partially organized thrombotic material was found. This was extracted as completely as possible from between the stitches before approximating the lips of the wound with the continuous running suture. It is possible that some residual organized thrombotic material was left attached to the internal aspect of the line of ventricular repair.

After excision of the aneurysm had been completed, the pericardium was repaired as well as possible, leaving a drainage opening posteriorly and dependently. The pericardium and pleura were flushed with sodium chloride solution. The latter was drained with a 26 F. urethral catheter in which extra perforations had been cut. This was inserted through a stab wound placed in the left posterior axillary line in the eighth intercostal

Fig. 6.—Appearance of the heart after completion of surgery.

space. Simple water-seal drainage was employed. The sixth and seventh ribs were approximated with four pericostal sutures of double no. 2 chromicized absorbable surgical suture. The skin was closed with continuous no. 32 stainless steel wire suture.

The patient stood the procedure well but received 1,500 cc. of whole blood (citrated) during the operation. He reacted promptly and was in good condition at the time of return to his bed. The postoperative surgical course was uneventful, the drainage tube being removed within 48 hours and the sutures on the 12th postoperative day.

Pathological Report.—The following pathological report was made. The specimen measures 5 by 7 cm. in its major diameters. It is ovoid in outline. The endocardium is thickened and covered with thrombi over one-third of its length. The epicardium presents several small adhesions. Microscopic examination of sections reveals that the structure of the wall of the ventricle is attached to an organizing blood clot. The endocardium exhibits diffuse fibrosis. The myocardium shows diffuse fibrosis and focal scarring. A diagnosis was made of endocardial fibrosis of the ventricular wall, with an attached blood clot (mural thrombosis) (fig. 7*A* and *B*).

COMMENT

The presence of ventricular aneurysm may imply markedly limited life expectancy and the threat of further significant complications. These facts have been recog-

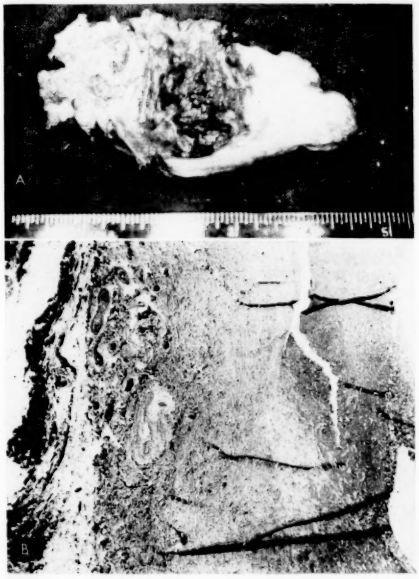

Fig. 7.—*A*, photograph of resected ventricular aneurysm specimen. *B*, photomicrograph of cross section of resected aneurysm. Note persistence of some muscular fibers as well as extensive fibrosis and mural thrombosis.

nized clinically for a considerable period of time. In their review of the subject matter, Schlicter, Hellerstein, and Katz [6] have emphasized a prophylactic therapeutic approach to the problem designed to combat the apparent tendency toward aneurysmal development following large transmural infarctions in those patients who have had a shortened period of bed rest. They likewise have stressed the importance of anticoagulant therapy, because of the frequent coexistence of mural thrombosis with myocardial infarction and ventricular aneurysm, and have reiterated the need for vigorous measures to counteract congestive heart failure when it occurs.

We propose that, under certain conditions, the successful removal of a ventricular aneurysm is a reasonable surgical procedure capable of correcting those abnormalities of heart function that are a direct result of the lesion. Furthermore, the present report suggests that

this method of therapy is possible and beneficial, even when symptoms are advanced and progressive and cannot be properly altered by vigorous medical measures.

The likelihood that ventricular aneurysm plays an important, if not an independent, role in the development of congestive heart failure is strongly suggested by the experiences with the present patient. Although no definitive measure was applied during surgery to alter the basic and severe underlying coronary arterial disease, the manifestations of a failing myocardium, dyspnea, edema, and gallop rhythm were clearly and beneficially altered by the operation. It appears reasonable to relate this accomplishment to the correction of the pathophysiological effects resulting from the myocardial aneurysm.

Theoretically, this lesion may adversely influence cardiac function by one or a combination of means. The actual mass of effective cardiac tissue is reduced by the presence of the aneurysmal sac that consists mainly of fibrotic fibers. The paradoxical expansion of that area of the heart that is involved occurs because the pouch receives an indeterminate portion of the left ventricular output during systole. Depending somewhat upon the size of the aneurysm, the circulatory dynamics simulate those of mitral insufficiency, a condition in which a portion of the left ventricular systolic output is lost into the left atrium. During diastole this blood is returned to the ventricle from the aneurysmal pouch, and thus to a varying degree the pathophysiological effect of aortic insufficiency is duplicated. Finally, the ballooning and outpouching of the aneurysm actually may exercise a stretching effect upon adjacent portions of the myocardium during systole and may contribute to an abnormal, ineffectual ventricular dilatation. When such events occur in a heart already depleted in reserve by chronic coronary artery disease, the tendency toward the development of cardiac failure becomes great. Burch and co-workers [11] have shown mathematically the progressive and ultimately overwhelming increase in the work requirements of a ventricle as it undergoes simple progressive symmetrical enlargement. The asymmetrical and often marked enlargement of the left ventricular chamber that results from an aneurysm and the induced compensatory dilatation must be at least equally deleterious.

It is interesting to speculate on the genesis of gallop rhythm in myocardial aneurysm on the basis of the present experience. This auscultatory finding has been recognized as an important sign in ventricular aneurysm as well as in heart failure. Immediately after surgery, in our patient, gallop was no longer noted, and it recurred only intermittently for the next few days, after which time it did not return. The prompt disappearance of the rhythm suggests that its genesis may be related to dilatation of the left ventricular chamber rather than to the other factors concerned with the dynamics of heart failure.

The electrocardiographic changes following surgery are those that might logically be expected following the removal of nonconducting ischemic and fibrotic tissue. The pattern of myocardial injury that persisted unquestionably was produced by those areas of disease that were adjacent to but not involved in the actual aneurysmal formation. No new myocardial injury could be demonstrated as the result of the surgery.

Successful excision of a myocardial aneurysm must restore the continuity of the left ventricle and assure as efficient a functioning chamber as the basic coronary artery disease permits. Certain of the physical characteristics of a cardiac aneurysm make this possible. Examination of a typical pathological specimen reveals that the base is the thickest portion of the aneurysmal pouch, providing an ideal type of tissue for the placement and fixation of sutures to approximate the edges of the divided myocardial tissue. Furthermore, the over-all vascularity at the junction of the base of the sac with the true ventricular wall is reduced sufficiently to facilitate extensive incision into the myocardium.

The present technique is applicable without seriously compromising the size of the ventricular lumen even when the aneurysm is of considerable size. In those critical instances when the pouch is unusually large, a subtotal resection of the sac might be performed with preservation of a portion of the rigid basal tissue. Although a portion of the aneurysm then would remain, the thickened tissue would tend greatly to restrain further paradoxical movement of the ventricular wall. It is possible to allow for the contingency that would arise should the base of a papillary muscle be attached within the area requiring resection. While this is an unlikely event, it may arise when the infarct is anterolateral and large. There is no reason why the stump of such a divided papillary muscle should not be reattached by suturing it within the reparative proximating myocardial suture line. Such repairs heal well in experimental animals.

There remain for discussion those considerations concerned with the proper indications for this type of surgical interference. Obviously patients who have ventricular aneurysms that result in significant clinical manifestations are extremely ill from an actual as well as from a prognostic standpoint. From the limited experience to date, it is evident that it is possible to remove a cardiac aneurysm in the face of persistent and progressive signs and symptoms of a failing myocardium. This practice has limited merit, involving significant risks that are to be countenanced only because of the dynamic threat to life that is posed by the continuing disease. It is more reasonable to suggest that, because of the unvarying tendency toward circulatory deterioration and the threat to life inherent in the existence of a ventricular aneurysm of appreciable size in spite of the most excellent medical attention, surgical removal be considered when the lesion is accessible and before serious manifestations develop.

SUMMARY

In a patient with myocardial infarction successful excision of a large ventricular aneurysm resulting from the infarction was done. The removal of the aneurysmal pouch resulted in the correction of congestive heart failure and the continuing pain of coronary artery insufficiency. It is reasoned that future thromboembolic issue occurring as the result of the aneurysm will likewise be avoided. Certain of the physical characteristics of ven-

11. Burch, G. E.; Ray, C. T., and Cronvich, J. A.: The George Fahr Lecture: Certain Mechanical Peculiarities of the Human Cardiac Pump in Normal and Diseased States, Circulation 5: 504, 1952.

tricular aneurysm permit excision without undue blood loss or compromise of the size or continuity of the left ventricle. In view of the natural history of myocardial aneurysm, it is suggested that excision be contemplated prior to the development of the serious consequences of that lesion.

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CLINICAL NOTES

SIMPLE POLYETHYLENE CATHETER FOR OPERATIVE CHOLANGIOGRAPHY

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and
Theodore L. Orloff, M.D., Philadelphia

Among the methods recommended to aid in the decision of whether or not to open the common bile duct is the operative cholangiogram.[1] An increasing number of surgeons have adopted operative cholangiography as a routine in all cholecystectomies. In the past several years since we have been performing operative cholangiography, using the cystic duct, we have felt that it has obviated the necessity of opening many common ducts as well as induced us to open others that would not otherwise have been explored. If the procedure accomplished nothing other than to relieve the surgeon of the necessity for further search for calculi after he has recovered enough to explain all defects visualized on the x-ray film, it would be well worth the time spent in performing the study.

Of the various techniques advocated for the performance of the cholangiogram, we do not care for the direct puncture of the common duct because of the leakage of bile this generally causes. This procedure also subjects the surgeon to undesirable x-ray exposure. Injection by means of needle puncture into the cystic duct (see figure, *A*) eliminates the former objection but introduces the possibility of extraductal injection and extravasation of opaque mediums. Injection through a T-tube usually partially obscures and distorts the common duct (see figure, *B*). We, consequently, prefer to make the injection through a catheter inserted in the cystic duct (see figure, *C*). Ureteral catheters and polyethylene tubing have been used for this purpose, but two difficulties have been encountered with this technique. After inserting the catheter, and prior to the injection, the catheter is apt to slip out of the duct, particularly when the packs are removed.

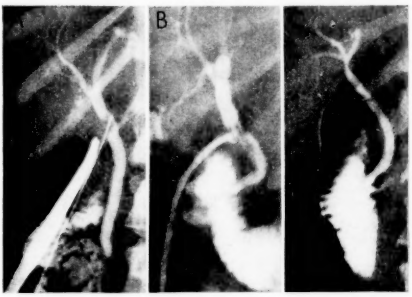
From the departments of surgery and radiology, Albert Einstein Medical Center, Northern Division.

1. (*a*) Hight, D., and Lingley, J. R.: Value of Cholangiograms During Biliary-Tract Surgery, New England J. Med. **246**: 761-765 (May 15) 1952. (*b*) Cotte, G.: Sur l'exploration radiologique des voies biliaires avec injection de lipiodol après cholécystostomie ou cholédocotomie, Bull. et mém. Soc. nat de chir. **55**:863-871 (June 22) 1929. (*c*) Mixter, G. G.; Hermanson, L., and Segal, A. L.: Operative Cholangiography: Evaluation of 406 Cases, Ann. Surg. **134**: 346-350 (Sept.) 1951.

In order to avoid this difficulty, there is a tendency to thread long segments of the catheter into the common duct, and, on occasion, the catheter has slipped into the duodenum so that the common bile duct was not visualized on the x-ray film. Others [1c] have reported the latter as one of the common causes of unsatisfactory cholangiogram. We have recently adopted a method of preparing polyethylene tubing to form a cuff just behind the tip, for the purpose of tying the tubing in place more securely and to prevent both of the previous technical errors.

MATERIALS

Segments of polyethylene tubing 2 to 3 ft. long are used. The long lengths are used to permit the surgeon to stay well away from the x-ray field during the injection. Two sizes of tubing are satisfactory—Clay-Adams PE 50 and PE 60 (outside diameters 0.965 and 1.22 mm. respectively). The end of the tubing is threaded over a straight pin, needle, or stylette. The polyethylene is softened by holding it about one-half inch above a match or lighter flame while revolving it between the fingers. It is then grasped between the thumb and index fingers of both hands, about 1 to 2 cm. behind the tip, and a 2 to 3 mm.



Cholangiograms. *A*, by means of a needle puncture into the cystic duct, with the distortion of common duct due to the needle. *B*, through a T-tube. *C*, through a catheter inserted in the cystic duct. The pancreatic duct is partially outlined.

segment of the tubing is telescoped on the pin. This builds up a ridge of polyethylene while the pin or stylette preserves the integrity of the lumen. If the ridge of polyethylene is too high or irregular, it may be smoothed down by gently rolling it between the fingers while it is still soft. The stylette is removed after the tubing cools. The catheter is sterilized by immersion in 1:1,000 solution of benzalkonium (Zephiran) chloride for 24 hours. After use, the tubing may be discarded or, if desired, may be rinsed and resterilized in the solution of benzalkonium chloride for further use.

TECHNIQUE OF CHOLANGIOGRAPHY

A well-padded wooden cassette holder, which can be constructed very simply out of plywood, is placed beneath the patient before anesthesia is begun. It is centered at the approximate level of the common bile duct. We have found it helpful to tilt the patient slightly toward

the right by raising the left shoulder and hip on folded blankets. This tends to project the extrahepatic biliary system away from the spine. After the cystic and common ducts are dissected out, a ligature is placed around the cystic duct at its junction with the gallbladder, to prevent escape of bile and gravel when the duct is opened. A second ligature is looped around the cystic duct closer to the common duct but is not tied down. A transverse opening is then made in the cystic duct through about one-half its thickness by a scissors or knife, and the previously prepared tube is threaded distally toward the common duct until the ridge is beyond the second ligature. This ligature is then tied down snugly over the tube but not tightly enough to compress it. The tube is pulled back till the ridge stops at the ligature. Air bubbles will be avoided by filling the tubing with saline solution before inserting it into the duct.

All packs and instruments are removed. (If the wound drapes have been sewed to the skin edges rather than fixed with towel clips, the necessity of removing the clips at this point is obviated.) The wound is covered by a sterile towel or sheet and the x-ray unit positioned. When the common duct is of normal caliber, 5 to 8 cc. of 35% iodopyracet (Diodrast) compound are then injected slowly. The number of cubic centimeters of iodopyracet is increased accordingly where the common duct is dilated. Just prior to completion of the injection the anesthetist stops the patient's respiration. When the injection is completed an exposure is made. The film is changed and a second exposure made after the injection of several additional cubic centimeters of iodopyracet compound. While the films are being developed, the operation proceeds. By the time the cholecystectomy is finished, the films will be available. The decision may then be made whether to perform a choledochotomy.

COMMENT

Performed in the preceding manner, operative cholangiography has proved to be a consistently valuable adjunct to safe, thorough biliary tract surgery. The tubing used as described avoids the pitfalls of accidentally pulling the catheter out of the duct, and/or in an effort to avoid this, inserting the catheter into the duodenum. The procedure adds but 5 or 10 minutes to the routine cholecystectomy. In exchange for this small expenditure of time and effort, the surgeon has the advantage of avoiding many negative choledochotomies. Information can be obtained not only as to the presence or absence of common duct calculi, but also, frequently, the number and location of calculi present, thus aiding in complete removal of stones if choledocholithotomy is performed.

SUMMARY

By the use of a polyethylene catheter prepared with a ridge behind the tip most of the common causes of unsatisfactory operative cholangiography are eliminated. These catheters may be prepared easily from readily obtainable materials.

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GENITOURINARY TRACT SCREENING AS A ROUTINE PROCEDURE IN ANGIOCARDIOGRAPHY

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John B. Johnson, M.D.
and
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In routine intravenous pyelography, with 20 ml. of 35% iodopyracet (Diodrast) compound, reasonably good visualization of the renal calyces, ureters, and bladder is obtained, provided the concentration power of the kidneys is still good. In routine angiocardiography, a larger quantity of a more concentrated iodopyracet compound is regularly administered intravenously (40 to 50 ml. of 70% iodopyracet). We thought that it might be of interest to obtain one or more kidney-ureter-bladder films following angiocardiography, since an adequate amount of contrast material had already been injected intravenously. Such a procedure involves no additional hazard to the patient and little additional expense. This method of urinary tract screening has been used in the last 70 patients studied by angiocardiography in our laboratory. Kidney-ureter-bladder films were taken in these subjects at 5 to 15 minutes following angiocardiography. Patients with a variety of cardiorespiratory diseases, both congenital and acquired, were included in the study. Whenever distinct or suggestive abnormalities of the urinary tract were discovered by this routine screening procedure, the patient was referred to the genitourinary service for further study.

RESULTS

It was with some surprise and of some importance that 10% of the patients studied showed some type of urinary tract abnormality. The following abnormal findings were discovered in patients not previously known to have genitourinary tract disorders: bilateral ptosis of kidneys (marked), marked atony of right ureter with dilatation, bilateral pelvic kidneys (see figure, *A*), hydronephrosis (two cases), unilateral movable kidney, and congenital bladder neck obstruction (see figure, *B*).

Two of these cases will be cited in more detail. One of these patients was a 15-year-old youth who had been followed in local hospital clinics since infancy with a diagnosis of massive atelectasis or congenital absence of one lung. Angiocardiographic studies revealed evidence of congenital absence of the left lung, but in addition an unsuspected finding was the presence of bilateral pelvic kidneys.[1] This abnormality was asymptomatic (see figure, *A*). The second case was that of a 65-year-old male, referred to the laboratory for evaluation of vascular changes in chronic cystic disease of the lungs, hypertension, and heart failure. No genitourinary abnormality was suspected. The kidney-ureter-bladder film taken 15 min-

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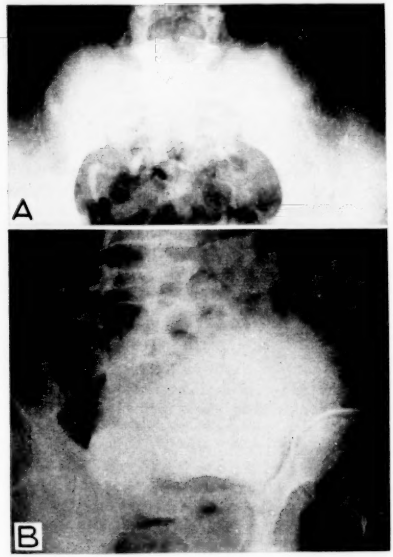
This study was supported in part by a grant from the National Heart Institute.

1. Clark, H.; Scott, R. B., and Johnson, J. B.: Pulmonary Agenesis—Roentgenographic and Post Mortem Findings in One Patient: Hemodynamic and Angiocardiographic Findings in Another, Pediatrics **15**:761-767 (June) 1955.

utes after angiocardiography revealed dilatation of the pelvis of each kidney and both ureters. The patient was referred to the genitourinary service, where a careful evaluation revealed findings diagnostic of congenital bladder neck obstruction. Retrograde studies demonstrated a large bladder with multiple diverticula, two of which were located at the site of entrance of the right and left ureters, respectively, so that the ureteral orifices could not be located through the cystoscope. The figure, *B*, demonstrates the multiple diverticula springing from the bladder, which is distended with dye injected through a catheter into the bladder following cystoscopy.

It is of interest that in none of these cases referred for angiocardiography, did the referring physician suspect any abnormality of the genitourinary tract. Without this routine visualization of the urinary tract following angiocardiography, most of these abnormalities would still be undiscovered. In several instances, the patient's health as a whole was affected by the urinary tract disorder.



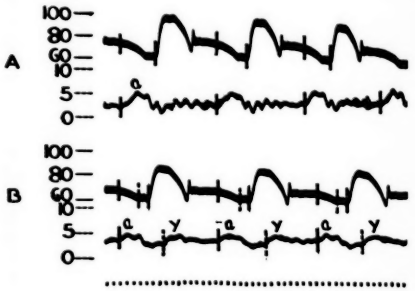
A, anteroposterior film of pelvis of 15-year-old boy, 10 minutes after intravenous administration of iodopyracet (Diodrast) compound for angiocardiography, showing pelves and calyces of both kidneys in pelvic circle. There were no clinical symptoms of these findings. *B*, anteroposterior film showing multiple diverticula in a 64-year-old man. Urologic evaluation revealed that the patient had a congenital bladder neck obstruction.

This detection of urinary tract pathology in 7 of 70 patients is significant and more than justifies this added feature in the evaluation of the patient as a whole. It seems important, therefore, that since kidney visualization is accomplished as a by-product of angiocardiographic studies, patients should have the benefit of a kidney-ureter-bladder film of the abdomen as a routine screening procedure in connection with angiocardiography.

CLINICAL DETECTION OF "PULSATING" LIVER

Salvatore M. Sancetta, M.D., Cleveland

To determine by palpation whether a pulsating liver is due to tricuspid insufficiency, to the impact of the contracting right ventricle, or to the expanding subdiaphragmatic aorta is often difficult. Current textbooks on physical diagnosis present no accurate method for differentiating these liver pulsations, other than the statement that both are systolic in timing and the examiner must be able to grasp the liver in order to appreciate actual expansion of the organ. In many instances the anatomy of the abdominal wall and its contents renders this maneuver impractical and, as will be shown, not even necessary.



A, aortic pressure pulse (above) and hepatic venous pulse (below) simultaneously inscribed in normal dog. *B*, the same pressure pulses in a dog with tricuspid insufficiency. Time interval 0.02 second (from Sancetta, S. M.: *Circulation Res.* **1**:256, 1953. Reproduced by permission of the publishers).

In the course of an investigation of the liver pulse in normal dogs, pressure pulses were recorded directly from the lumen of the hepatic veins through a brass cannula, with the use of Gregg optical manometers for registration.[1] *A* of the figure shows the aortic pressure pulse above and the hepatic venous pulse below, simultaneously inscribed. As may be noted in the hepatic pulse, there is a constant positive presystolic wave (*a*), which is due to right atrial contraction. This pulsation cannot be manually felt either by directly grasping the exposed liver in dogs or by external grasping of an enlarged liver in man, although in the latter situation a similar wave may be recorded by the external application of a linear microphone pick-up over the right hypochondrium.[2] In *B* of the figure are shown the aortic (above) and hepatic (below) pressure pulses, the latter recorded from the

From the Department of Medicine, Western Reserve University, at Cleveland City Hospital.

1. Sancetta S. M.: Some Observations on the Hepatic Venous Pulsation in the Anesthetized Dog, Circulation Res. **1**: 256-259 (May) 1953.

2. Luisada, A. A.: Heart: A Physiologic and Clinical Study of Cardio-Vascular Diseases, Baltimore, Williams & Wilkins Company, 1948.

hepatic vein, following the production of tricuspid insufficiency. A second positive wave (y), which appears late in systole and does not return to the baseline until the onset of ventricular diastole, is inscribed in the hepatic pulse tracing. A similar wave has been recorded by Luisada [2] by the application of a linear microphone over the right hypochondrium in clinical instances of expansile, pulsating livers. As demonstrated in *B* of the figure, Luisada points out that this pulsation occurs late in systole, and he recommends the use of such a recording device for the detection of the expansile liver pulsation.

In the majority of instances, simple physical examination is sufficient to make the correct diagnosis. This is based on the fact that the expansile hepatic pulsation due to tricuspid regurgitation occurs late in systole, whereas the pulsations transmitted directly by impact from the contracting ventricle or the subdiaphragmatic aorta occur synchronously with the onset of systole. In addition, the transmission times of the arterial systolic pressure waves to the carotid and the subdiaphragmatic aorta are virtually identical. The fingers of one hand are placed on a carotid artery, while the other hand presses gently upon the enlarged liver. If the pulsations are transmitted by a ventricular or aortic impact, both carotid and hepatic pulsations are felt to occur simultaneously; if due to tricuspid insufficiency, the hepatic pulsation is felt after the carotid pulsation, imparting a see-saw sensation to the examining fingers. In instances where both impact and regurgitant pulsations have been present, either a double pulsation or an excessively prolonged "fusion" pulsation extending throughout the entire systolic phase has been noted.

The accuracy of this simple procedure in establishing a diagnosis of expansile, pulsating liver due to tricuspid insufficiency has been checked by recording characteristic insufficiency pressure curves from the right atrium during cardiac catheterization in man and by postmortem examination.

3395 Scranton Rd.

Fungus Infection of the Feet.—Pathogenic fungi are readily shed from the feet of many individuals with and without clinically active fungous disease of the feet. Persons clinically free from fungous disease of the feet often—and perhaps usually—harbor pathogenic fungi on their feet, even if they cannot be detected in one or more careful clinical and mycologic examinations. Attempts to induce acute attacks—or at least some evidence of clinical fungous disease of the feet in 45 subjects, mycologically free from the disease, by deliberate exposure to masses of pathogenic fungi in foot baths have been entirely unsuccessful. Not a single instance of fungous disease occurred within six weeks after exposure, although during this period fungi were found one or more times on the feet of 60% of the exposed subjects. The ready transmission of fungi from the exposed feet to the unexposed "control" feet was demonstrated. . . . Exogenous exposure to fungi in swimming pools, shower stalls, bathrooms, etc., plays a minor or negligible role in eliciting acute attacks of fungous infections of the feet. . . . It is the decreased resistance of the skin of the human host with a resultant activation of the pathogenic fungi, previously lying dormant as opportunists on the patients' own feet which is usually responsible for such attacks.—R. L. Baer, M.D.; S. A. Rosenthal, Ph.D.; Hyman Rogachefsky, M.D., and J. Z. Litt, M.D., Newer Studies on the Epidemiology of Fungous Infections of the Feet, *American Journal of Public Health*, June, 1955.

DIAGNOSTIC PROBLEMS

PRESENTATION OF CASE

Horace M. Frazier, M.D., Chicago

A 41-year-old woman was hospitalized on Nov. 11, 1954, because of purpuric hemorrhages that had appeared after inconspicuous injuries for two years. In February, 1954, she felt weak and had exertional dyspnea. One month prior to admission the family physician found her blood pressure to be 200/100 mm. Hg, although it had previously been normal. Subsequent examinations showed a labile blood pressure. She had noted no change in her average weight, body contour, hair distribution, or libido. Her friends had commented that her face appeared swollen and her abdomen protuberant. Amenorrhea had been present for four months. Her menses had been irregular for many months before the amenorrhea. The history indicated that in August,

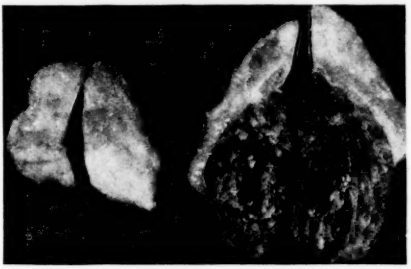


Fig. 1.—Smaller left adrenal and the tumor in the right gland.

1953, a diagnosis of glaucoma of the left eye was made and pilocarpine was prescribed. Subsequently, periods of weakness and light headaches developed.

Physical Examination.—On admission the patient revealed no acute distress, a round face, and moderate obesity of the face, neck, and trunk. Large ecchymoses were observed in the right lateral thorax, thighs, and legs. There was slight cardiomegaly, a question of a "buffalo hump," increased hair on the face, neck and anterior portion of the chest, and striae gravidarum. The blood pressure was 200/105 mm. Hg. The spleen was not palpable, and the clitoris was not enlarged.

Laboratory Findings. — The leukocyte count was 10,900 per cubic millimeter, and the hemoglobin level was 15 gm. per 100 cc. The blood urea was 44 mg. per 100 cc., and urea clearance was 50% of normal. The urine gave a 2 + reaction for albumin. The urinary sediment showed two to three granular casts per low-power field and two to five leukocytes per high-power field. The serum calcium, phosphorus, and protein levels were normal, as were the liver function studies. The

From the Department of Pathology, University of Chicago. Clinical Fellow of the American Cancer Society, Inc.

stools gave a 1 to 4 + positive test for occult blood. The platelet count varied between 60,000 and 75,000 per cubic millimeter. The dextrose tolerance test gave a diabetic type of curve. Results of the direct Coombs test, osmotic fragility test, and four blood smears for L. E. cells were negative. Results of tests for urinary corti-

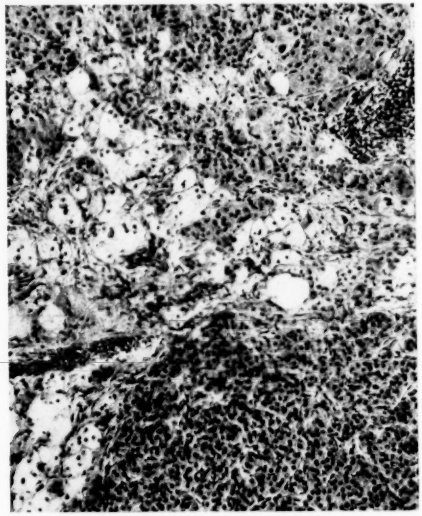


Fig. 2.—Photomicrograph (× 130) showing the adrenal cortical adenoma with at least two types of cells.

coids and 17-ketosteroids were normal. The platelet agglutinins and leukoagglutinins were normal. Roentgenograms of the skull were normal, and no osteoporosis of the skeleton was observed.

Course.—On the 3rd hospital day the hemoglobin level was 11 gm. per 100 cc., and by the 14th day it had fallen to 6.8 gm. The fecal urobilinogen was 442 Ehrlich units per 24 hours. Bone marrow aspirations showed increased erythroblastic activity. The patient was given three whole blood transfusions of 500 cc. each. Subsequently, signs of pulmonary edema developed and digitalization was necessary. Her urinary output slowly decreased and her blood urea nitrogen, serum phosphorus, and potassium levels rose. She died suddenly on the 20th hospital day. The final clinical diagnoses were: (1) adrenal cortical hyperfunction, (2) primary renal disease, (3) idiopathic hemolytic anemia, and (4) purpura with gastrointestinal bleeding.

ANATOMIC DIAGNOSIS

The obese body measured 62 in. (157.48 cm.) in length, weighed 134 lb. (60.8 kg.), and showed 1 to 2 + pitting edema of the lower extremities. Purpuric areas were observed in the skin of the right leg, abdomen, and right side of the thorax. There was hirsutism involving the face, neck, and anterior portion of the chest. The pleural cavities together contained 500 cc. of clear amber fluid. The right adrenal gland was enlarged, weighing 21 gm. It was deformed by an oval, subcapsular, distinctly circumscribed tumor that measured 3 by 2 by 2 cm. (fig. 1). Its mottled external color varied from dark brown to golden yellow. The texture varied from firm to soft. On the cut surface the mottling was more pronounced, and numerous small, golden yellow areas were seen. Histologically this tumor was a benign adrenal cortical adenoma composed chiefly of (1) large polyhedral foamy lipid-rich cells, (2) smaller eosinophilic cells, and (3) eosinophilic cells with dark brown pigment in the cytoplasm (fig. 2). The cells were arranged in small bodies and cords supported by a delicate fibrovascular stroma. Prominent thickening and hyalinization of their wall and platelet thrombosis was observed in some of the arterioles and arteries within the tumor. The portion of the right gland not involved by tumor, as well as the left adrenal (4 gm.), showed a lipid-poor glomerular zone that was distinguished with difficulty from an equally lipid-poor outer fascicular zone, a lipid-rich inner zona fasciculata, and an apparently absent reticular zone. The medulla showed invasion by cortex at some points. The arteries in these parts of the glands showed less sclerosis than those within the tumor. Each kidney weighed 175 gm. and showed the thrombonecrosis, fibrinoid necrosis, and hyalinization of many glomeruli and arterioles characteristic of malignant hypertension (fig. 3). The

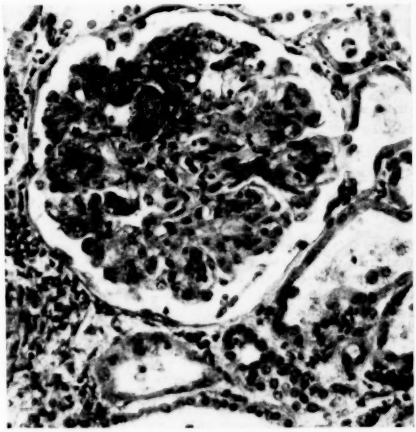


Fig. 3.—Photomicrograph (× 275) showing the thrombonecrosis fibrinoid necrosis and hyalinization of the glomerulus and arteriole of the kidney.

moderately hypertrophied heart weighed 440 gm. and showed left ventricular prominence. Histologically, slight focal scarring of the myocardium and several small recent infarcts were seen. The coronary arteries were slightly sclerotic but not occluded. The splenic and pancreatic arterioles and small arteries showed sclerotic changes, resembling those in the adrenals and kidneys,

but without thrombosis or necrosis. The aorta showed a slight atherosclerosis. The lumbar bone marrow grossly appeared dark red, and histologically increased erythroid hematopoiesis was observed. The spleen showed slight hematopoiesis, scattered hemosiderophages, and hyaline centers in some of the Malpighian bodies. The lungs weighed 280 and 210 gm. and showed clusters of alveolar hemosiderophages and an occasional recent small hemorrhage. Evidences of other hemorrhages were found in the small and large intestine and in the bladder.

The findings indicated a functioning adrenal cortical adenoma and death from malignant arteriolar nephrosclerosis. The miniature myocardial infarcts resembled those seen in patients with a greatly depressed blood pressure in the presence of sclerotic coronary arteries. The effusions into the serous cavities conform to these findings. There were evidences of a moderate hemorrhagic purpura; their relationship to the adrenal cortical hyperfunction is obscure. The associated findings included hydropericardium, bilateral hydrothorax, and slight fatty changes in the liver.

COMMENT

Gilbert H. Marquardt, M.D., Chicago

Adrenal cortical syndrome, pituitary basophilism, and Cushing's syndrome (adrenal cortical hyperfunction) are terms that are used synonymously. A hyperfunctioning of the basophilic elements in the anterior lobe allegedly causes the syndrome. Autopsy examinations in this syndrome may show adrenal tumors only, bilateral or unilateral; bilateral or unilateral hyperplasia of the adrenals; pituitary basophilic tumor only; or combined pituitary and adrenal lesions characterized by neither pituitary nor adrenal changes. Thymic tumors associated with adrenal cortical changes have also been reported in this syndrome. The role of the pituitary in this syndrome is uncertain. The hyaline degeneration of the basophilic cells of the anterior lobe (Crooke's changes) may be the effect rather than the cause of the syndrome.

Signs and symptoms of adrenal cortical disease are well defined and should suggest diagnostic tests and perhaps surgical investigation to the clinician. Obesity of the face, neck, and trunk is suggestive when combined with a protuberant abdomen and thin, weak-looking extremities. The face becomes rounded and fat and tends to obscure the ears. An increase in the interscapular fat is often present—the so-called buffalo hump. Wide, purplish striae occur on the abdomen and occasionally on the back and arms. The skin otherwise may be atrophied and show a loss of normal tone. Osteoporosis is commonly present although it was not noted in this case. This finding is usually apparent on x-ray examination of the skeleton. Hirsutism of the male type is common but usually less marked than in adrenal virilism. The women patients usually resort to shaving, and hair begins to grow in usually nonhairy areas. A small group of men with this syndrome develop feminizing signs such as gynecomastia and genital atrophy. This latter group usually show excessive estrogens in the urine. Amenorrhea in women is common. In this regard arrhenoblastomas must be borne in mind, especially when masculinization is marked.

Hypertension is often present and is likely to be of a labile or paroxysmal type. This symptom must be differentiated from essential or malignant hypertension. In this case the relationship to the renal disease is of great interest. I would assume that the syndrome hastened the renal destruction. The hyalinization of the glomeruli in this case suggests preexisting chronic nephritis. Diabetes in this case is of the type usually associated with the adrenal cortical syndrome. In most cases it is more severe. Purpuric lesions are common, but the relationship to the syndrome is obscure as stated by Dr. Frazier. This condition probably accounted for much of the blood loss in addition to the collections of hemosiderophages. The coexistence of the above findings would suggest the possibility of adrenal cortical lesions. Study of the renal regions by retrograde pyelography may reveal abnormalities. Air injections into the perirenal areas may outline a tumor if it is of demonstrable size or may show the kidney to be displaced downward. Increased 17-ketosteroid excretion in the urine may help to make the diagnosis. (In this case the determinations gave normal values.) In patients with pure hyperplasia, values may be increased, but in those with tumors, low or normal values are common. When the 17-ketosteroids are normal, help may be obtained by finding an increase in the output of dehydroisoandrosterone. Such a finding recently led to a substantiated diagnosis by Conn. The treatment of this syndrome is surgical. If a tumor or hyperplastic glands are removed there is likely to be atrophy of the contralateral or remaining tissue. Therefore one must be prepared to treat these patients preoperatively and postoperatively as if they had Addison's disease (adrenal cortical hypofunction).

It is interesting to contemplate the results in this case if the adenoma had been removed fairly early. What effect would the extirpation have on the kidneys and blood pressure?

Payment of Death Claims.—The death claims paid by the Metropolitan Life Insurance Company on Ordinary, Industrial, and Group Life insurance policies reached a new high of about $366,845,000 in 1954. . . . The cardiovascular-renal diseases accounted for death claim disbursements of . . . 56.3% of [this] total; two decades ago the corresponding proportion was 33.5%. . . . Death claim payments on account of the malignant neoplasms (cancer and allied conditions) came to . . . 19.4% of the total . . . compared with 12.2% of the total disbursements two decades earlier. Somewhat over $3 out of every $4 paid in claims last year were for deaths from the malignant neoplasms or from the cardiovascular-renal diseases. The increasing proportion of disbursements for these two groups of diseases reflects not only the reduction in mortality from the infectious diseases but also the growing proportion of the Company's policyholders at the older ages. Claims on deaths from the infectious diseases have dropped sharply in the past two decades. Disbursements on account of tuberculosis, for example, decreased nearly 70% from 1934 to 1954, while the claim payments for all causes of death combined rose 140%.—$366,845,000 Paid in Death Claims in 1954, *Metropolitan Life Insurance Company Statistical Bulletin*, April, 1955.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. . . . . CHICAGO 10, ILL.
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HEMOGLOBINOMETRY

GUEST EDITORIAL

Israel Davidsohn, M.D.

When one evaluates the relative merits of clinical laboratory tests, at least four desiderata are considered: (1) the accuracy of a single determination as compared with a known standard; (2) the reproducibility of a series of determinations when done by the same technician, by a group of technicians in the same laboratory, and by different laboratories; (3) the speed from the point of view of availability in case of emergency; and (4) the simplicity of the procedure from the point of view of economy. It has been stated [1] that there is probably no procedure more commonly used in clinical laboratories than hemoglobinometry, and there are few that are less satisfactory in their results. The deficiencies may reside, in part, in inadequacies of the chosen method. In larger part, however, they result from manipulative errors in the measurement and processing of the samples of blood. The latter involves questions of technical proficiency that are entirely within the control of the analyst himself. When, however, he converts his observations, such as gasometric or photometric readings or measurements of specific gravity, to grams of hemoglobin in 100 ml. of blood, he must depend upon his own calibration or a calibration supplied by an instrument maker. If a uniform hemoglobin standard were available nationally and a single method of analysis were widely practiced, the individual laboratory would then have assurance not only that its results would be comparable from month to month but that they would also be comparable with those from other laboratories employing the same standard. Inconsistencies in results that persisted under these conditions could then be clearly attributed to technical and manipulative errors.

There are at least three reasons why defining the limits of accuracy for hemoglobin determinations would be desirable. First, the prevalent opinion in circles of experienced hematologists is that there must be a difference in value of at least 1 gm. of hemoglobin to be significant. On the other hand, many clinicians are disturbed when told that a change in the hemoglobin value of 0.2 gm. is not significant. It would be desirable to reconcile these differences so that clinicians may know when a true change in hemoglobin concentration has actually occurred, as opposed to a change due to expected variation of the method. Second, clinical pathologists need not expect from their technicians a degree of accuracy that is beyond the limits of inherent accuracy of the instruments or methods employed in their laboratories. Finally, the standard of reproducibility will be different for one technician and for a group of technicians in a single laboratory. It will have to be different again when the results of two different laboratories are compared. The physician must recognize these facts, otherwise he may expect from the laboratory a degree of accuracy and reproducibility of hemoglobin determination that is greater than is possible and justifiable. This is further complicated by the fact that, as a rule, the physician at the bedside is using a value obtained from the examination of a single sample and not multiple ones. Therefore, the physician must not consider as different two values that are within the range of reproducibility for the laboratory that he is using.

The need for improvement of standardization of hemoglobin determinations has been recognized for some time. In 1941 the British Medical Research Council instituted an extensive study of the problem of standardizing hemoglobinometry and emerged with (*a*) a recommended analytical procedure, (*b*) a simple hemoglobinometer for general use, and (*c*) a certified national hemoglobin standard for distribution to cooperating laboratories.[2] In the United States the initiative was taken by the Army Medical Service Graduate School with a limited field trial [3] of a cyanmethemoglobin solution proposed by Dr. David L. Drabkin. The success of the Army plan so impressed the hematology study section of the National Institutes of Health that it requested the National Research Council to explore the possibility of establishing a national hemoglobin standard for general use throughout the country.

To this end the National Academy of Sciences–National Research Council established an *ad hoc* panel under the subcommittee on blood and related problems of the division of medical sciences. This panel has sought the cooperation of the College of American Pathologists, the American Society of Clinical Pathologists, the American Association of Blood Banks, the Department of Defense, the Veterans Administration, the National Institutes of Health, and the National Bureau of Standards. It has also maintained close liaison with the committee on hemoglobinometry of the Medical Research Council of the United Kingdom and with the National Research Council of Canada. The panel gave serious consideration to the British plan but decided that, in respect to simplicity and adaptability, the cyanmethemoglobin method adopted by the U. S. Army would be more suitable for use in the United States and Canada. Among the forms of hemoglobin well adapted to photometry, cyanmethemoglobin has outstanding advantages. It has been shown that solutions of this pigment are stable for years when preserved at refrigerator temperatures. All forms of

1. Cannan, R. K.: Proposal for the Distribution of a Certified Standard for Use in Hemoglobinometry: Prepared by the Division of Medical Sciences, National Academy of Sciences–National Research Council, Washington, D. C., Am. J. Clin. Path. **25**: 376-380, 1955.

2. King, E. J., and others: Determination of Hæmoglobin: VI. Test of the M. R. C. Grey-Wedge Photometer, Lancet **2**: 971-974, 1948.

3. Crosby, W. H.; Munn, J. I., and Furth, F. W.: Standardizing a Method for Clinical Hemoglobinometry, U. S. Armed Forces M. J. **5**: 693-703, 1954.

hemoglobin likely to be found in blood, with the exception of sulfmethemoglobin, are quantitatively converted to cyanmethemoglobin upon the addition of a single reagent.

There should be no reluctance to employ this standard and reagent because they contain cyanide. The concentration of cyanide in the reagent that is proposed for use is only 52 mg. of potassium cyanide per liter. Its lethal dose for man approaches 4 liters.[4] Most clinical laboratories use for the determination of uric acid a reagent containing 50 gm. of this salt per liter. In view of this, and of the fact that laboratories of clinical pathology are disciplined in the use of such dangerous materials as isotopes and virulent pathogens, it would seem that the handling of the proposed reagent constitutes a quite negligible hazard.

The panel agreed to undertake a field trial of one year's duration. It is now felt that the plans for this field trial have progressed to the point at which the participation of laboratories desiring to cooperate may be invited. The standards will be distributed without charge to clinical laboratories on application, provided they will agree to meet certain minimum requirements for participation. Details of the procedure for the determination of hemoglobin as cyanmethemoglobin, as well as details of the procedure for calibrating another method in terms of the cyanmethemoglobin standard, will be furnished with the standard.

Distribution will be made to civilian laboratories chiefly by the College of American Pathologists, 203 N. Wabash Ave., Chicago; to military and government laboratories by the Army Medical Service Graduate School, the Navy bureau of medicine and surgery, the Air Force Surgeon General's Office, and the Veterans Administration; and to laboratories in Canada through the division on medical research, National Research Council, Ottawa, Canada. Cooperating laboratories are requested to apply to the distributing agency with which they are most closely associated.

It would not be realistic to expect that the recommendations of the *ad hoc* panel will be universally accepted. However, it is expected that this definite step toward the improvement of clinical hemoglobinometry will be generally received with the acclaim it deserves.

PEPTIC ULCER IN CHILDREN

Although peptic ulcer in children was at one time believed to be a rare disease, in recent years it has been reported with increasing frequency in the medical literature. In 1941 Bird and his associates [1] described 38 cases of peptic ulcer in infants under 14 days of age; they found 26 duodenal and 12 gastric ulcers in this group, with the greatest incidence being in male infants. Using autopsy statistics as a basis for computation, Goldsberry [2] estimates there are about 50,000 cases of undiagnosed gastric ulcer in the pediatric population between 1 and 6 years of age. In general, autopsy statistics suggest an incidence varying between 1 and 1.5%.

During the course of a pictorial presentation of peptic ulcer in children appearing in a recent issue of the *A. M. A. Archives of Surgery*, Alexander [3] declares that the symptomatology of peptic ulcer in children seems to be more dependent on the age of patients than on the location of lesions. Peptic ulcers in infancy may be associated with extensive hemorrhage, acute perforation, and shock; indeed, these events can occur with considerable rapidity to result in death before an appropriate diagnosis is made or effective treatment begun. Occasionally, massive hemorrhage or perforation occur without producing recognizable evidence of gastrointestinal disease. The distribution of pain is neither significant nor diagnostic, but roentgenographic findings are most helpful. Abdominal migraine, food allergy, mesenteric adenitis, and dietary indiscretions that produce gastroenteritis add to the difficulty of differentiating these conditions from peptic ulcer.

From the foregoing it is evident that peptic ulcer in children, while uncommon, does exist, possibly more widely than hitherto suspected. Presumably, the small number of cases that have been reported is more a matter of failure to recognize the existence of the disease than of the condition's actual absence. In either event, Alexander points out that when abdominal pain, nausea, vomiting, and anorexia take place in older children, and when the "feeding problem" group of symptoms ensue in infants and younger children, physicians should consider peptic ulcer in the differential diagnosis, with efforts directed toward proving or disproving this possibility.

PROTECTION AGAINST ATOMIC BOMB TESTS

Although most of us have known that measures were being taken to protect the public against the various hazards connected with testing our atomic weapons, it is reassuring to learn from Dunning's detailed account of these measures (see this issue, page 900) what can be done in this matter. No nonparticipant in the tests has had any permanent retinal damage due to the light emitted by the fire ball following an explosion. Although minor blast damage to buildings has occurred, there has been no blast injury to persons. Superficial burns due to radioactive fall-out have been reported in a few domestic animals beyond the test site, but none have been reported in human beings. For each new type of weapon developed, scientists must search for means of protecting the human body against it. Just as the gas mask was invented and has undergone constant improvement since it was introduced in World War I, so devices for detecting radiation hazards and methods of dealing with them are under constant study. Those who from time to time hear unfounded rumors concerning remote harmful effects of the testing program for atomic weapons in this country will find in Dunning's timely article facts with which to refute such rumors.

4. Sollman, T.: A Manual of Pharmacology and Its Application to Therapeutics and Toxicology, ed. 7, Philadelphia, W. B. Saunders Company, 1948, p. 713.

1. Bird, C. E.; Limper, M. A., and Mayer, J. M.: Surgery in Peptic Ulcerations of Stomach and Duodenum in Infants and Children, Ann. Surg. **114**: 526, 1941.

2. Goldsberry, J. J.: Gastric Ulcer in Preschool Child: Report of Case, New England J. Med. **245**: 844, 1951.

3. Alexander, F. K.: Peptic Ulcer in Children, A. M. A. Arch. Surg. **70**: 935 (June) 1955.

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CONFERENCE ON NEUROLOGICAL DISORDERS AND EMPLOYABILITY

The nation's first conference on "Neurological Disorders in Industry" was held in Chicago on May 24, 1955, under the sponsorship of the Chicago Association of Commerce and Industry, the Illinois Epilepsy League, the Council on Industrial Health of the American Medical Association, and the National Epilepsy League. The intent was to explore the difficulties associated with the employment of the neurologically disabled, and more specially those persons subject to seizures. Twenty million Americans are estimated to be afflicted with neurological and sensory disorders. Of this group, an estimated million and a half have epilepsy. Representatives from management, personnel, and labor, and from the fields of neurology, industrial health, public health, and vocational training and rehabilitation met to learn about the problems experienced by those who have been pronounced medically fit for work but who cannot find work in the regular employment market.

Reports were given regarding the advances in medical treatment which have been made during the past decade. There was recognition that the lay community and industry were not fully aware of these advances in medical care. Consequently, policies and attitudes have not kept pace with present-day progress. The epileptic who has been declared medically fit for work has learned from experience that his history of epilepsy alone will bar him from consideration for employment. Although he would prefer to have his employer know about his illness, he has resorted to secrecy, with the hope that if he does have a seizure on the job, he will have established himself as a dependable and competent employee whose history of epilepsy does not interfere with his work.

The employer, on the other hand, who must concern himself with the output of work and cost to his company, must think in terms of compensation, health and pension benefits, time losses, and attitudes of fellow employees. All medical authorities in epilepsy point out the wide variation in the extent of the physical handicap in individual cases. They state that modern medical treatment is effective in completely eliminating the handicap in at least 50% of the cases. But the employer apparently still bases his attitude toward the employability of the total group on what he knows about the handicaps of the most seriously disabled. The epileptic whose seizures are under control should not be forced to rely either on public assistance or on a sheltered workshop.

As a result of the exploratory discussion, the following conclusions were reached. 1. The community as a whole, and industry specifically, must be informed of recent advances in medical care of neurological disorders and the employability of a large group of individuals formerly considered unemployable. 2. Workmen's compensation acts should be amended in order to make it easier for employers to hire handicapped people. 3. An effort should be made to increase the public understanding of epilepsy, so that fellow employees will not thoughtlessly create problems for the rehabilitated epileptic employee, and so that people so afflicted need no longer conceal their illness and can be placed in positions suited to their particular needs and abilities. A report of the meeting is being prepared and may be obtained from the National Epilepsy League, Inc., 130 N. Wells St., Chicago 6.

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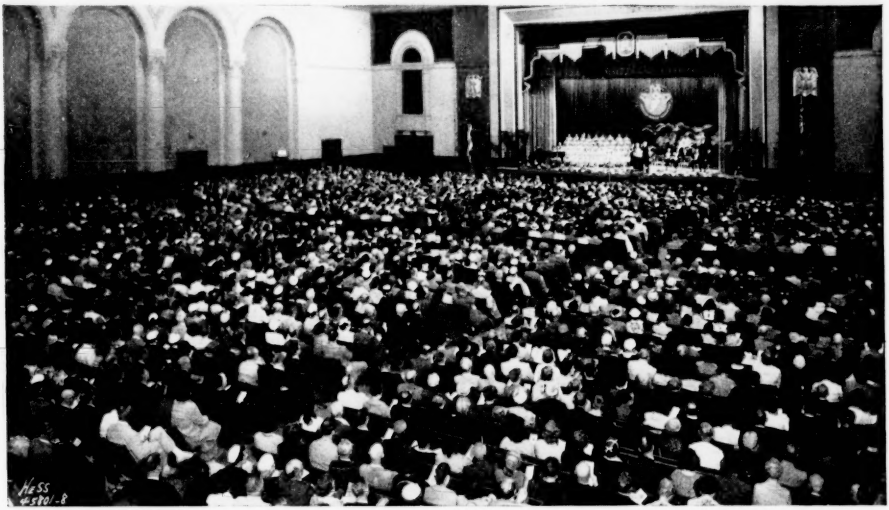
SCENES FROM THE ATLANTIC CITY MEETING



Partial view of the 5,500-person audience that overflowed the Convention Hall ballroom to hear Dr. Elmer Hess and Dr. Norman Vincent Peale during the A. M. A. Inaugural Ceremony.

The House of Delegates, A. M. A. policy-making body, is shown here at work in the Traymore Hotel during the Atlantic City meeting.

Stage view of the Inaugural Ceremony in Convention Hall Tuesday evening. Dr. James R. Reuling, Speaker of the House of Delegates, opened the evening program.

Following his inauguration as President of the A. M. A., Dr. Elmer Hess and other officers of the organization received guests at the Presidential Reception and Ball.

Dr. Walter B. Martin (right), Norfolk, Va., about to receive the Past-Presidents' Medal following the termination of his tenure from Dr. Dwight H. Murray, Napa, Calif., then Chairman of the Board of Trustees.

Dr. Dwight H. Murray, Napa, Calif. (left), administered the presidential oath of office to Dr. Elmer Hess, Erie, Pa., at the Inaugural Ceremony. Later in the week, Dr. Murray was elected President-Elect of the A. M. A.

Drs. T. P. Murdock (left), Meriden, Conn., and L. W. Larson (right), Bismarck, N. D., were reelected to the A. M. A. Board of Trustees. Dr. James R. Reuling, Bayside, N. Y., was newly elected to the Board.

Two of the newly elected officers of the American Medical Association, Drs. Louis M. Orr (left), Orlando, Fla., Vice-Speaker of the House of Delegates, and Millard D. Hill, Raleigh, N. C., Vice-President.

Mrs. George Turner, 1954-1955 president of the Woman's Auxiliary, presented a check for $79,025 to Dr. George F. Lull, General Manager of the A. M. A. and vice-president of the American Medical Education Foundation, which raises funds and allocates them to U. S. medical schools.

The new presidents of the American Medical Association and its Woman's Auxiliary, Dr. Elmer Hess, Erie, Pa., and Mrs. M. G. Lawson, Little Rock, Ark.

V 15
1955

Dr. Jonas E. Salk, who developed the antipoliomyelitis vaccine, on his arrival for the A. M. A. session. Meeting him as he registered at the Shelburne were Dr. James R. McVay, Kansas City, Mo., Trustee, and Dr. Elmer Hess, A. M. A. President. Dr. Salk appeared Monday morning on a panel entitled "Prospects for the Control of Poliomyelitis."

The Pennsylvania delegation honored its native son, Dr. Elmer Hess, at a reception at the Traymore Tuesday afternoon prior to his inauguration that evening.

Sen. Estes Kefauver of Tennessee addressing the third Annual National Medical Civil Defense Conference Saturday in Atlantic City.

Dr. Vincent du Vigneaud (right) received the $5,000 Passano award and certificate during the A. M. A. meeting in Atlantic City for his research on the nature of the pituitary gland hormones. Here Robert S. Gill, Passano Foundation president, makes the presentation.

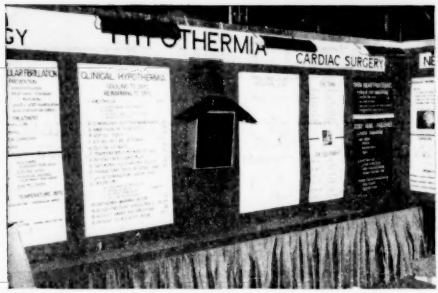
Members of the National Association of Science Writers met Tuesday afternoon in the Traymore. They were in Atlantic City covering the 104th Annual Meeting of the A. M. A.

View of the Technical Exposition in Convention Hall where more than 350 exhibits were displayed by medical service firms.

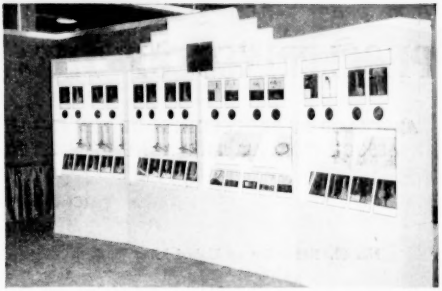
← Setting a fractured ankle at one of the daily presentations of the exhibit on fractures. Here recently developed techniques were being demonstrated by Dr. William Kisiel, Springfield, Mass., and other physicians.

↓ The 17th Annual Art Exhibition of the American Physicians Art Association was one of the most popular nonscientific features in Convention Hall. Dr. Francis H. Redewill (left), secretary-treasurer, discusses one of the award-winning paintings with Dr. and Mrs. Hubert F. Hawkins of Dallas, Texas, and Dr. Balwant Singh Kohli, New Delhi, India.

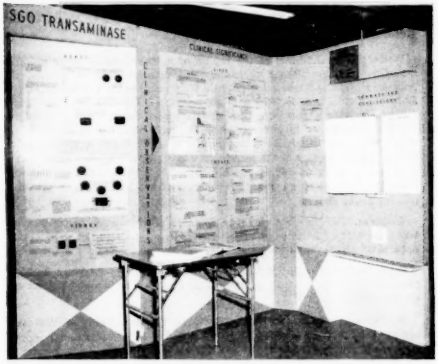
Three-dimensional sound films on blood sugar screening of diabetic patients become bright and clear with special viewing glasses worn by these three physicians, attending both the A. M. A. and the concomitant American Medical Women's Association meetings.



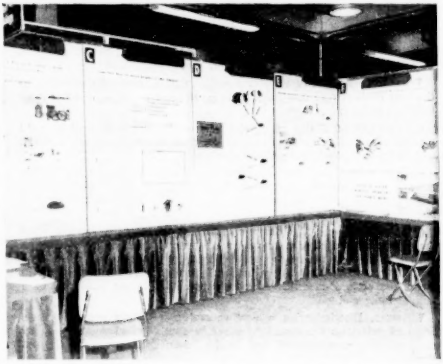
The exhibit on General Hypothermia in Surgery by Drs. Henry Swan, Sylvan Baer, Emil Blair, Arthur Prevedel, Vernon Montgomery, and Strother Marshall, University of Colorado Medical Center, Denver, won the Hektoen gold medal.



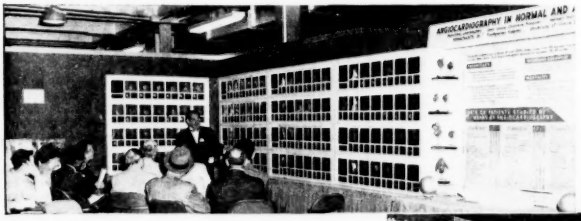
The exhibit on Esophagitis by Drs. H. W. Schmidt, F. H. Ellis, A. M. Olsen, J. H. Grindlay, and A. H. Bulbulian, Mayo Clinic and Mayo Foundation, Rochester, Minn., won the Billings gold medal.



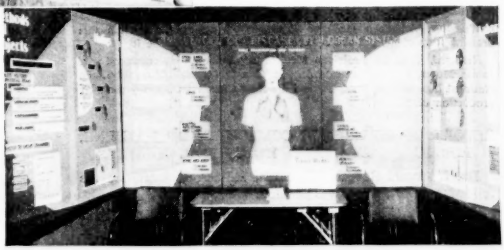
The exhibit on Serum Glutamic Oxalacetic Transaminase Variations in Heart and Liver Disease by Drs. John S. LaDue and Felix Wroblewski, Sloan-Kettering Institute, Research Division of Memorial Center, New York, won the Hektoen bronze medal.



The exhibit on Experimental Procedures for Inducing Acceptance of Tumor Homografts by Drs. George D. Snell, Nathan Kaliss, and Andrew A. Kandutsch, R. B. Jackson Memorial Laboratory, Bar Harbor, Maine, won the Hektoen silver medal.



The exhibit on Angiocardiography in Normal and Abnormal Hearts by B. M. Gasul, E. H. Fell, H. G. Bucheleres, C. J. Marienfeld, Gershon Hait, R. F. Dillon, P. G. Szanto, and Maurice Lev, the Hektoen Institute for Medical Research, Cook County Children's Hospital, Presbyterian Hospital, and University of Illinois College of Medicine, Chicago, won the Billings silver medal.



The exhibit on Periodic Health Appraisal: Methods and Results of Examinations by Drs. Robert J. Bolt, O. T. Mallery Jr., and C. J. Tupper, University of Michigan, Ann Arbor, Mich., won the Billings bronze medal.

PROCEEDINGS OF THE ATLANTIC CITY MEETING

ABSTRACT OF PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION AT THE ANNUAL MEETING IN ATLANTIC CITY, N. J., JUNE 6-10, 1955

(Continued from page 855)

No. 60. Resolution on United Mine Workers Medical Care Plan

Dr. John F. Burton, for the Oklahoma delegation, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, Administrators of the United Mine Workers Welfare and Retirement Fund have repeatedly stated their primary objective is to obtain the best medical care obtainable for beneficiaries of the Fund; and

WHEREAS, In certain areas the medical administrators of the UMW Welfare and Retirement Fund have issued directives restricting participation in its medical care program to certified specialists, to the exclusion of and in discrimination against general practitioners; and

WHEREAS, This policy violates certain cardinal principles essential to the best medical care obtainable in light of present day knowledge, these being as follows:

(1) Freedom of choice of physician is an important element in good medical care and any abridgement of the right to choose among qualified and competent physicians destroys this right;

(2) The family physician or general practitioner fills a vital role in our system of medical practice and in the delivery of proper medical care; the importance of this factor is well recognized by all leaders of medical and social thought today;

(3) Any directive which compels utilization of specialist services when the services of a family physician or general practitioner would be adequate, or any mandatory requirement for consultation when such consultation might conceivably be wholly unnecessary, is certain to increase the costs of medical care whether paid for by the individual or a mutual fund; and

WHEREAS, Discrimination against general practitioners per se violates accepted principles enunciated by the American Medical Association, by most specialty organizations, and by the American Academy of General Practice; now therefore be it

Resolved, That this House of Delegates of the American Medical Association expresses its disapproval of and opposition to the present tendency of the UMW Welfare and Retirement Fund administrators to disregard the principles enunciated herein and requests that it immediately rescind all directives inconsistent therewith.

NOTE: The report of the Reference Committee on Insurance and Medical Service on Resolution No. 60 will be found following Resolution No. 10 on page 842 of the July 9 issue of THE JOURNAL.

No. 61. Resolution on Television Program "Medic"

Dr. Donald Cass, California, presented the following resolution, which was referred to the Reference Committee on Hygiene, Public Health, and Industrial Health:

WHEREAS, The television program "Medic" has brought to the American public an accurate and true picture of medical practice; and

WHEREAS, "Medic" has served the public interest and welfare; and

WHEREAS, American medicine has received great benefit from this dramatization of the art and science of medicine; therefore be it

Resolved, That the American Medical Association does commend Mr. James Moser, creator, the Los Angeles County Medical Association, the National Broadcasting Company and the Dow Chemical Company for their production of "Medic."

REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

Dr. J. Arnold Bargen, Chairman, Minnesota, submitted the following report, which was adopted:

Resolution No. 61 on Television Program "Medic."—Your reference committee approves this resolution, congratulates California for bringing the television program "Medic" to our attention, and urges on its creator and the creators of similar productions that the high standards of this particular production be continued.

No. 62. Resolution on Ethics of Ophthalmic Dispensing

Dr. Truman C. Terrell, on behalf of the Texas delegation, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, On the basis of the report of a committee of three ophthalmologists representing the three national ophthalmological groups, the American Medical Association published an interpretation of ethics in THE JOURNAL, Dec. 25, 1954, which in part says: (1) Ophthalmologists cannot ethically provide glasses for their patients unless the service is unavailable without hardship or inconvenience to the patient; (2) it is unethical for ophthalmologists to profit from the sale of glasses; (3) ophthalmologists cannot derive income from merchandising and still be considered on a professional level; (4) it is unethical for an ophthalmologist to profit from the service of an optician working either in his office or on a referral basis; and

WHEREAS, The opinions of this committee of ophthalmo'ogists was not based on factual knowledge of the practices or desires of the practicing ophthalmologists whom they purported to represent; and

WHEREAS, Many ethical ophthalmologists feel the responsibility for their patients' glasses is a medical problem and cannot be separated from the eye examination; and

WHEREAS, All physicians are responsible for the quality of remedies, appliances, or services which they prescribe for their patients and should be diligent to protect their patients from poor quality or excessive prices by those who furnish these ancillary services; if the physician chooses to render these services himself, he must be guided by the same principle; and

WHEREAS, In the state of Texas many ophthalmologists dispense glasses to their patients as an integral part of their ophthalmological service to those patients; and

WHEREAS, It is desirable that all ophthalmological groups and the American Medical Association know the feeling of the ophthalmologists of Texas; therefore be it

Resolved, That the House of Delegates of the American Medical Association declares that (1) it does not concur with the report of the committee of three ophthalmologists representing the three national ophthalmological groups; (2) it believes that spokesmen of the three national ophthalmological groups did not express the views of the majority of the members for whom they spoke; (3) it is of the opinion that dispensing of glasses by an ophthalmologist, or his employed optician, should be a great advantage to the patient, both in quality and price, and that such dispensing is not unethical even though some profit might accrue to the ophthalmologist; (4) it believes that the ophthalmologist would have his patient's best interest at heart when he prescribed and dispensed glasses to that patient, in the same manner and to the same degree as an internist would in prescribing a protracted series of injections or a surgeon advising a surgical procedure, all of which would accrue to some financial advantage to the prescriber; (5) it feels that the true ethics of dispensing any remedy or appliance by any physician depends on the innate honesty and integrity of that individual physician, without which no amount of regulation can be sure of protecting the patient. The House of Delegates further declares that it is unalterably opposed to the acceptance of gifts, commissions, or rebates from any independent optical dispenser.

NOTE: The report of the Reference Committee on Miscellaneous Business on Resolution No. 62 will be found following Resolution No. 7 on page 841 of the July 9 issue of THE JOURNAL.

No. 63. Resolutions on Voluntary Prepayment Insurance Programs

Dr. Percy E. Hopkins, for the Illinois delegation, introduced the following resolutions, which were referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, The practice of medicine is a personal professional service rendered by duly qualified and licensed physicians to individual patients; and

WHEREAS, Ideally all relationships, including financial, between patients and the physicians of their own choice should remain confidential and not be surrendered to any third party; and

WHEREAS, The responsibility of the physician is to his patient rather than to any insurance company, plan or program; and

WHEREAS, The American Medical Association has on several occasions defined those services which properly constitute the practice of medicine; and

WHEREAS, At its 1949 session the House of Delegates of the American Medical Association adopted a statement to the effect that the American Medical Association is not engaged in the insurance business and has no intention of giving a preferential standing to any type of voluntary plan; and

WHEREAS, At the 1950 Clinical Session of the House of Delegates of the American Medical Association the following statement of principle was adopted: "It is the consensus of the Council (on Medical Service) that constituent state and territorial associations and component societies should endeavor to continue to improve the standard for all types of voluntary health insurance within their respective areas. The physician as well as the patient should be ever mindful of the true concept of voluntary health insurance which embraces the philosophy that such mechanisms are aids to the recipients of health care in the financing of such care"; and

WHEREAS, American tradition for years has firmly placed the responsibility for the financing or purchasing of services on the individual or family unit; and

WHEREAS, Such definitions, principles and policies above referred to should not be altered or amended by policies or contracts of insurance organizations, regardless of their sponsors; and

WHEREAS, Efforts are being made by different groups, including insurance companies and prepayment plans, in various parts of the United States to effect preferential treatment of their particular members or subscribers and to grant franchises or privileges of a special nature; and

WHEREAS, To grant any preferential considerations or exclusive franchises to members of one group which are not available equally to all self-supporting segments of the population, whether insured or not insured, would not be in the public interest; now therefore be it

Resolved, That the Illinois State Medical Society reaffirms the above actions of the House of Delegates of the American Medical Association as well as the action taken at the clinical session of said House in 1953 which condemned all insurance contracts that classified any medical service as a hospital service; and be it further

Resolved, That the Illinois State Medical Society deems it improper and in violation of the public interest for the medical profession to grant any special or exclusive concessions to any one type of insurer or for any insurer to seek special consideration which would be exclusive to it; and be it further

Resolved, That the Illinois State Medical Society deems it improper, unprofessional, and contrary to the public interest for any physician to increase his usual fees for professional services on the basis that his patient is entitled to insurance benefits; and be it further

Resolved, That these resolutions be presented to the House of Delegates of the American Medical Association at the next annual meeting with the recommendation that they be adopted.

NOTE: The report of the Reference Committee on Insurance and Medical Service on Resolution No. 63 will be found following Resolution No. 19 on page 845 of the July 9 issue of THE JOURNAL.

No. 64. Resolution on Veterans Administration Medical Program

Dr. J. Lafe Ludwig, California, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The American Medical Association has, through its House of Delegates and officers, supported all programs for the establishment and continued improvement of medical care and hospitalization of all members of the armed forces and all veterans with "service-connected" disease or disabilities; and

WHEREAS, The Medical Task Force of the Hoover Commission has reported on the continued abuses and growth of the so-called non-service-connected patient care program of the ever-expanding Veterans Administration Medical Program; and

WHEREAS, The Committee on Federal Medical Services of the Council on Medical Service was instructed to conduct an educational program for the medical profession, presenting the problems and inevitable results of unlimited growth of "government medicine" for a select group of our citizenry (the initial efforts of this educational program were approved by the House of Delegates); now therefore be it

Resolved, That the Board of Trustees, the officers of the American Medical Association, and the Committee on Federal Medical Services be instructed to accelerate the program of educating the medical profession and expand it to a program of educating the lay public concerning the numerous nonmilitary governmental medical programs, including that of the Veterans Administration and with particular reference to the expansion of the "non-service-connected" program of the Veterans Administration.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Charles G. Hayden, Chairman, Massachusetts, presented the following report, which was adopted:

Resolution No. 64 on Veterans' Administration Medical Program.—Because too little attention has been given to the numerous nonmilitary governmental medical care programs other than that of the Veterans Administration, your reference committee has rewritten this resolution as follows, for emphasis:

Resolved, That the Board of Trustees, the officers of the American Medical Association, and the Committee on Federal Medical Services be instructed to accelerate the program of educating the medical profession and, when feasible, to expand it to a program of educating the lay public concerning the numerous nonmilitary governmental medical programs.

It is apparent to your committee that adoption of this resolution will involve the appropriation of funds for its implementation. It therefore recommends that your committee's revision of the resolution be adopted and referred to the Board of Trustees for proper implementation and financing.

No. 65. Resolution on Ophthalmology

Dr. Percy E. Hopkins, for the Illinois delegation, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The American Optometric Association at its annual convention at Seattle, June 20-22, 1954, resolved that the field of visual care is the field of optometry and should be exclusively the field of optometry; and

WHEREAS, There is pending in the state of Oklahoma, House Bill No. 777 and Senate Bill No. 155 giving optometrists the right to make all tests and measurements for the discovery and/or diagnosis of glaucoma and other diseases or conditions of the eye; and

WHEREAS, The house of delegates of the Illinois State Medical Society at its annual meeting on May 20, 1955, adopted the resolution unanimously; now therefore be it

Resolved, That the American Medical Association, in the interest of public welfare, preservation of eyesight, and prevention of blindness, is unalterably opposed to being excluded from the field of visual care and to granting the optometrist the right to engage in the practice of medical ophthalmology.

NOTE: The report of the Reference Committee on Miscellaneous Business on Resolution No. 65 will be found following Resolution No. 26 on page 847 of the July 9 issue of THE JOURNAL.

No. 66. Resolution on Executive Offices of American Medical Association

Dr. James Z. Appel, for the Pennsylvania delegation, read the following resolution, which was referred to the Reference Committee on Reports of Officers:

Resolved, That the Board of Trustees appoint a special committee to proceed with a study regarding the advisability of moving the executive offices of the American Medical Association from Chicago to Washington, D. C.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS

Dr. Clifford C. Sherburne, Chairman, Ohio, presented the following report, which was adopted:

Resolutions Nos. 66 and 70, similar in intent, were discussed as one. The officers of the American Medical Association were

invited to appear before your reference committee, and Drs. Martin, Murray, Lull, Smith, and Moore responded and discussed the various aspects of the matter. No other witnesses appeared. In the light of present knowledge, your reference committee recommends disapproval of these resolutions.

No. 67. Resolution on Accreditation of Hospitals

Dr. Elmer P. Weigel, on behalf of the New Jersey delegation, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, The accreditation of hospitals is of fundamental importance in the development and maintenance of the highest standards of medical and hospital care of patients; and

WHEREAS, The present method of accreditation of hospitals by the Joint Commission represents a division of authority and an uncoordinated approach to problems of hospital direction and supervision; and

WHEREAS, The American Medical Association is the only association of physicians which includes all other organizations of physicians and surgeons; and

WHEREAS, One of the main functions of the American Medical Association is to establish policies concerning patient welfare, for the medical profession as a whole, in all fields; therefore be it

Resolved, That the American Medical Association make a vigorous effort to bring under its supervision and control the determination of requirements for hospital accreditation, and to that end that the American Medical Association undertake to assume full and exclusive responsibility for the establishment and enforcement of standards for hospital accreditation, for that purpose consulting with such other groups as are legitimately interested.

NOTE: The report of the Reference Committee on Medical Education and Hospitals on Resolution No. 67 will be found following Resolution No. 3 on page 840 of the July 9 issue of THE JOURNAL.

No. 68. Resolution on Voluntary Medical Care Plans

Dr. Charles G. Hayden, Massachusetts, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, The American people have demonstrated their interest in meeting the costs of medical and hospital care through voluntary prepayment plans; and

WHEREAS, There exists in the United States a wide variety of voluntary prepayment plans for medical and hospital care which provide differing contracts and benefits; and

WHEREAS, The prospective purchasers of a voluntary prepayment medical or hospital plan have no adequate guide to enable them always to choose wisely among the plans available, with the result that some have at times purchased misleading or unsatisfactory contracts; and

WHEREAS, It is in the public interest that criteria be established as a guide for prospective purchasers of voluntary prepayment medical and hospital plans; and

WHEREAS, The medical profession being the only qualified source of medical care, it is incumbent on the American Medical Association to make a clear statement as to the purposes and desirable features of contracts for medical and hospital plans as a protection to the general public and the thousands of physicians who are participating in medical care plans; therefore be it

Resolved, That (1) the scope of benefits to be provided should be stated clearly. Any waiting periods, exclusions or other limitations should be given emphasis equal to that given benefits and should be held to the minimum consistent with sound insurance principles; (2) the level of benefits should be related realistically to the levels of costs of medical and hospital care in the community; (3) coverage once legitimately in force should continue to be available to both group and individual members regardless of age, state of health, change of place of employment or retirement, and no penalties should be invoked or premiums arbitrarily raised because of any of these factors; (4) a reasonable percentage of the premium should be returned to the subscriber in the form of benefits; (5) the subscriber should have free choice of physicians; and (6) medical and professional policies should be determined and controlled by the physicians who participate in the plan and who will render the professional services provided by the plan.

NOTE: The report of the Reference Committee on Insurance and Medical Service on Resolution No. 68 will be found following Resolution No. 19 on page 845 of the July 9 issue of THE JOURNAL.

No. 69. Resolutions on Introduction of New Methods in Treatment or Prevention of Disease

Dr. Earle M. Chapman, for the Massachusetts delegation, introduced the following resolutions, which were referred to the Reference Committee on Hygiene, Public Health, and Industrial Health:

WHEREAS, The extraordinary method by which the National Foundation for Infantile Paralysis chose to announce the results of and future plans for the use of a vaccine for possible immunization against poliomyelitis violated accepted scientific procedures; and

WHEREAS, The confusion and uncertainty concerning the use of the present vaccine that occurred immediately after the public announcement has caused distrust and concern throughout the world; and

WHEREAS, There are traditional methods by which investigators and scientists in all fields announce and critically review discoveries and applications thereof; be it

Resolved, That we reaffirm our confidence in the established methods of announcing new and possibly beneficial methods in the treatment and prevention of disease; and be it further

Resolved, That we reaffirm the need for the presentation of reports on medical research before established scientific groups, allowing free discussion and criticism, and the publication of such reports, including methods employed and data acquired on which the results and conclusions are based, in recognized scientific publications; and be it further

Resolved, That we urge that physicians and public health officials defer action in the widespread use of new methods in the treatment and prevention of disease until such methods have been properly presented, published, and subjected to critical review for a reasonable period of time.

REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

Dr. J. Arnold Bargen, Chairman, Minnesota, submitted the following report, which was adopted:

Resolution No. 69 on Introduction of New Methods in Treatment or Prevention of Disease.—Your reference committee decided to substitute the following resolution for No. 69:

WHEREAS, There are traditional methods by which investigators and scientists in all fields announce and critically review discoveries and applications thereof; be it

Resolved, That we reaffirm our confidence in the established methods of announcing new and possibly beneficial methods in the treatment and prevention of disease; and be it further

Resolved, That we reaffirm the need for the presentation of reports on medical research before established scientific groups, allowing free discussion and criticism, and the publication of such reports, including methods employed and data acquired on which the results and conclusions are based, in recognized scientific publications.

No. 70. Resolution on Moving American Medical Association Headquarters

Dr. George A. Earl, for the Minnesota delegation, read the following resolution, which was referred to the Reference Committee on Reports of Officers:

Resolved, That the Speaker of the House appoint a committee from the House of Delegates to study and report to the House their findings and recommendations pertaining to the suggestion by President-Elect Hess that the American Medical Association headquarters, in part or as a whole, be moved from Chicago to Washington, D. C.

NOTE: The report of the Reference Committee on Reports of Officers on Resolution No. 70 will be found following Resolution No. 66 on page 934.

No. 71. Resolutions on Draft of Medical Students

Dr. Edward L. Compere, Section on Orthopedic Surgery, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Selective Service has followed a policy of drafting medical students who elect to interrupt their medical education in the sophomore, junior, or senior years to become assistants in the departments of physiology, pathology, anatomy, physiological chemistry, bacteriology, or other preclinical departments; and

WHEREAS, These departments have depended on medical students for their laboratory assistants; and

WHEREAS, The above-mentioned policy on the part of Selective Service has deprived the preclinical departments of most medical schools of these assistants, who are needed for the training of medical students; and

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WHEREAS, In the past student assistants following their graduation from the medical schools have in many instances returned to the preclinical departments to become the teachers and professors of preclinical subjects; and

WHEREAS, With this source of assistants and of future teachers eliminated by the policy of Selective Service of drafting these students as soon as they have lost their medical status, the medical schools of the country have been hampered in their effort to provide the best education in the preclinical departments; and

WHEREAS, The deans of the medical schools and the professors of the preclinical departments have recognized this as a most serious problem and a threat to the future medical education in this country; and

WHEREAS, The need for expansion of the medical schools with increased facilities for larger numbers of medical students has been repeatedly proclaimed by various political leaders of this country; and

WHEREAS, The training of the medical students of today and in the years which lie ahead will be seriously jeopardized if the present policy of Selective Service with regard to drafting of medical students who drop out of school to become assistants and teachers of preclinical subjects is permitted to continue; therefore be it

Resolved, That the House of Delegates of the American Medical Association protest this disruption and interference with the medical school training programs and declare such policy unwise and not to the best interest of medical education and is therefore detrimental to the welfare of the country; and be it further

Resolved, That copies of this resolution be sent to the President of the United States and to each member of both houses of Congress.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Charles G. Hayden, Chairman, Massachusetts, presented the following report, which was adopted:

Resolution No. 71 on Draft of Medical Students.—This resolution has to do with deferment from the draft of medical students who, as part of their undergraduate training in medicine, devote an additional year or so to one of the basic sciences and thus become vulnerable to the draft. Your reference committee recommends approval of this resolution.

No. 72. Resolutions on Deferment of Young Doctors

Dr. Edward L. Compere, Section on Orthopedic Surgery, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, During the past three or four years many young physicians who wished to proceed with graduate training have not been permitted to do so but have been ordered to report for duty under the "Doctor-Draft" law, and thus have had their graduate training interrupted; and

WHEREAS, This policy has created a deficiency of residents and fellows in many medical training centers, making it difficult to render adequate medical service to the patients; and

WHEREAS, This same policy has resulted in interrupting the training of young physicians who showed promise of brilliant careers had they been permitted to complete their medical training in a postgraduate program; and

WHEREAS, Many of these doctors having served with the armed forces have considered that it was too late to take up their postgraduate program and hence have not done so; and

WHEREAS, These same young physicians had they been permitted to continue with their graduate training to its completion could then have been called into service and have been prepared to render greater service in one or the other of the branches of the armed forces; and

WHEREAS, Such a policy does not appear to us to be a wise one from the standpoint of the care of the patients in the armed forces, and is certainly not wise from the standpoint of the development of the highest type of medical personnel in our country; now therefore be it

Resolved, That the House of Delegates of the American Medical Association protests this policy and proclaims that in its opinion it is unwise and not to the best interest of either the armed forces or of our country; and be it further

Resolved, That young physicians who are graduates of recognized medical schools and who wish to increase their medical knowledge through postgraduate training in medicine or surgery or one of the special branches of medicine or surgery shall be deferred from military service until completion of their residency training program; and be it further

Resolved, That the recommendations of this House of Delegates, as contained in this resolution, be made known to the President of the United States and to each member of the Congress of the United States.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Charles G. Hayden, Chairman, Massachusetts, presented the following report, which was adopted:

Resolution No. 72 on Deferment of Young Doctors.—While your reference committee is in complete accord with the intent of this resolution, it recommends disapproval on the grounds that it is inconsistent with the committee's previous recommendation that the "Doctor-Draft" law not be extended.

No. 73. Resolution on Repeal of Section 8, Chapter I, Principles of Medical Ethics

Dr. Joseph C. Griffith, for the Wisconsin delegation, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Section 6 of Chapter I of the Principles of Medical Ethics provides in part that "the ethical physician, engaged in the practice of medicine, limits the sources of his income received from professional activities to services rendered the patient"; and

WHEREAS, This principle applies to all situations involving the professional activities of a physician and makes it clear that the fundamental point involved is that income from ancillary services and facilities provided through a physician's office is essentially on a nonprofit basis; and

WHEREAS, Section 8 deals specifically with the physician and the matter of his ownership or operation of a drugstore and is in some respects either inconsistent with or in conflict with Section 6 and, in any event, is unnecessary; now therefore be it

Resolved, That Section 8, Chapter I of the Principles of Medical Ethics be repealed.

NOTE: The report of the Reference Committee on Miscellaneous Business on Resolution No. 73 will be found following Resolution No. 7 on page 841 of the July 9 issue of THE JOURNAL.

No. 74. Resolution on Change in Name of Section on Dermatology and Syphilology

Dr. Robert R. Kierland, Section on Dermatology and Syphilology, introduced the following resolution, which was referred to the Reference Committee on Sections and Section Work:

WHEREAS, The incidence of syphilis is decreasing; and

WHEREAS, The need for specialized care by dermatologists in the treatment of patients with syphilis is decreasing; and

WHEREAS, The American Medical Association's *Archives of Dermatology and Syphilology* has changed its title to *A. M. A. Archives of Dermatology*; now therefore be it

Resolved, That that section now known as the Section on Dermatology and Syphilology henceforth be designated by the American Medical Association as the Section on Dermatology.

REPORT OF REFERENCE COMMITTEE ON SECTIONS AND SECTION WORK

Dr. J. Wallace Hurff, Chairman, New Jersey, submitted the following report, which was adopted:

Resolution No. 74 on Change in Name of Section on Dermatology and Syphilology.—Your committee has reviewed this resolution and concurs in its recommendation that henceforth the section now known as the Section on Dermatology and Syphilology shall be known as the Section on Dermatology.

No. 75. Resolution on Voluntary Inclusion of Doctors of Medicine Under Federal Social Security

Dr. William A. Hyland, Michigan, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The American Medical Association has traditionally held to the principle that its members are free to arrange their financial security as they choose, provided that such arrangement does not compromise the practice of their profession; and

WHEREAS, Federal Social Security is established on a permanent basis in the United States and represents one type of security program; and

WHEREAS, The American Medical Association, although successfully opposing efforts to compel all doctors of medicine to participate in the Federal Social Security System, has at no time opposed the principle of allowing doctors of medicine to participate in the Federal Social Security program on a voluntary and self-employed basis; and

WHEREAS, Many doctors of medicine have expressed their desire to participate voluntarily in Federal Social Security; therefore be it

Resolved, That the American Medical Association petition the Congress of the United States so to amend the Federal Social Security Act as to permit any doctor of medicine who desires to qualify voluntarily thereunder to do so as a self-employed individual, provided the Congress does not compel all doctors of medicine so to participate.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Charles G. Hayden, Chairman, Massachusetts, presented the following report, which was adopted:

Resolution No. 75 on Voluntary Inclusion of Doctors of Medicine Under Federal Social Security.—To function at all, so-called social insurance programs must encompass all or nearly all of a given population. For this reason compulsory participation is mandatory, and any exceptions are likely to be temporary and ephemeral. With this in mind, your reference committee is not disposed to recommend support by the American Medical Association of any effort to include physicians in the O. A. S. I. program on either a compulsory or a voluntary basis. This is not to say, however, that your committee would automatically support a recommendation that the American Medical Association actively resist efforts to include physicians in the O. A. S. I. program on a voluntary basis. Such a recommendation would have to be considered on its own merits.

Your reference committee is of the opinion that there are still a number of physicians who are not as familiar as they might be with the underlying philosophy of the O. A. S. I. program and the implications inherent in its practical application. Paramount in this group would seem to be young physicians about to enter practice, who have families. To them, the survivor aspects of the program can make a strong appeal. For this reason your committee recommends that the Board of Trustees cause to be drafted a clear and concise statement listing the reasons why the American Medical Association is opposed to compulsory inclusion of physicians under the Federal O. A. S. I. program, and that this statement be given wide currency within the medical profession and among the lay public. In making this recommendation your committee is not unaware of the efforts that have been made in this regard up to the present time.

No. 76. Resolution on Changes in Legal Status of the Epileptic

Dr. Hans H. Reese, Section on Nervous and Mental Diseases, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The legal status of the epileptic under the laws of the several states has not kept pace with advances in medical science which make possible the control of the greater number of persons so afflicted; and

WHEREAS, It is medically unrealistic and socially discriminatory to perpetuate the legal segregation of this group; therefore be it

Resolved, That the American Medical Association urge its component societies to support state legislation which will (1) delete all reference to the epileptic from statutes referring to the eugenic marriage laws; (2) amend the eugenic sterilization laws to make them inapplicable to epileptics; (3) permit an epileptic who has responded and continues to respond to medical treatment without seizures for two years to operate a motor vehicle under continuous medical and licensing safeguards; (4) amend workmen's compensation laws that would afford protection to employers of epileptics, to fellow employees of epileptics, and to epileptics themselves.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Charles G. Hayden, Chairman, Massachusetts, presented the following report, which was adopted:

Resolution No. 76 on Changes in Legal Status of the Epileptic.—Your reference committee was very favorably impressed by the testimony in behalf of this resolution and is convinced that modern methods of treatment and control of epilepsy have made archaic many of the legal restraints that have grown up around this affliction over the years. Because your committee has neither the time nor the competence to explore and evaluate all of the implications of this resolution, it recommends that it be referred to the Board of Trustees for study and subsequent disposition.

No. 77. Resolution on Ethics of Members of American Medical Association Lecturing to Nonmedical Groups

Dr. W. L. Benedict, Section on Ophthalmology, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, There was adopted by the House of Delegates of the American Medical Association in 1950 a resolution declaring it ethical for members to engage in lectures and other measures for the dissemination of information to nonmedical groups; and

WHEREAS, This resolution has been interpreted by some members of the Section on Ophthalmology and by other physicians as permission to teach optometrists; and

WHEREAS, These relations with optometry have led to abuses and harmful use by optometrists of the information thus gained to the public detriment; therefore be it

Resolved, That it is unethical for any doctor of medicine to teach in any school or college of optometry, or to lecture to any optometric organization, or to contribute scientific material to the optometric literature, or in any way to impart technical medical knowledge to nonmedical practitioners.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. Dwight L. Wilbur, Chairman, California, presented the following report, which was adopted:

Resolution No. 77 on Ethics of Members of the American Medical Association Lecturing to Nonmedical Groups.—Your reference committee was in agreement with this resolution that it is unethical for any doctor of medicine to teach in any school or college of optometry, or to lecture to any optometric organization, or to contribute scientific material to the optometric literature, or in any way to impart technical medical knowledge to nonmedical practitioners, and recommends its adoption.

Nos. 78, 79, and 80

Dr. William L. Benedict, Section on Ophthalmology, introduced the following three resolutions, Nos. 78, 79, and 80, each of which was referred to the Reference Committee on Miscellaneous Business:

No. 78. Resolution on Ophthalmologic-Optometric Relations

WHEREAS, Optometry has increasingly and widely throughout the United States encroached on the practice of medicine to the detriment of the public; and

WHEREAS, Optometric organizations have caused to be introduced into various state legislatures over a period of many years and increasingly in recent years bills which would permit the practice of ophthalmological medicine and surgery by optometrists; and

WHEREAS, The diagnosis of disease of itself constitutes the practice of medicine; and

WHEREAS, United States Public Law 734 requires the several states, in order to participate in the federal program, to accept the opinion of the optometrist as to the cause of blindness in applicants for aid to the blind, thus giving legal recognition to the practice of medicine by unqualified practitioners, who are thereby exposed to prosecution; and

WHEREAS, Optometry has sought to identify itself in the public mind with medicine by approaching civic and governmental agencies in the guise of qualified experts on matters of every description pertaining to the eye; and

WHEREAS, Optometry has harassed the practicing ophthalmologist by restrictions and attempted restrictions on the dispensing optician and other ancillary technical workers under the supervision of the physician; and

WHEREAS, For the first time in the United States legislation has been introduced by a nonmedical group to limit the physician in the practice of medicine in that it would forbid the practice of a branch of medicine to all physicians except those who meet certain stipulations; therefore be it

Resolved, That the Section on Ophthalmology of the American Medical Association: (1) take the necessary steps to dissolve the National Committee on Eye Care, formerly the Interprofessional Committee on Eye Care; (2) request that the various state medical and ophthalmological organizations be vigorously supported by the American Medical Association in the unremitting opposition to further encroachment on the field of medicine by optometry or any other nonmedical group; (3) oppose the

commissioning of optometrists as such, by any title, in the armed forces, and feel that positive action should be taken to bring about the discontinuance of this practice, and request that the armed forces provide full medical eye care for all personnel to the end that no member may be subjected to eye care by nonmedical personnel without direction or supervision by an ophthalmologist; (4) request the American Medical Association to press for revision of Public Law 734, part 4—Section 341E, clause 10, to require that certification of blindness be made only by a qualified medical practitioner; and (5) bring to the attention of the National Society for the Prevention of Blindness and similar lay agencies concerned with the prevention of blindness and the conservation or restoration of vision that the professional aspects of those problems are medical considerations and therefore the concern of the physician and not within the scope of practice of limited practitioners unqualified to deal with diseases of the eye; and be it further

Resolved, That the Section on Ophthalmology of the American Medical Association petition the House of Delegates of the American Medical Association, in the interests of the public welfare, to request the Board of Trustees of the American Medical Association to appoint a permanent Committee on Medical Eye Care, which committee should be charged with, among others, the following responsibilities: (1) to promote and to prevent limitation of medical eye care; (2) to formulate a policy which will safeguard the public interest relative to possible changes in legislation relating to eye care; (3) to aid the several District of Columbia, state, and regional committees to comprehend the over-all problem and to develop the ability and interest to deal with such problems at state level; (4) to receive information, coordinate, and advise state committees on problems of legislation arising in each state; (5) to prepare suitable material for dissemination to the public and material for dissemination to the medical profession generally, presenting the history of ophthalmology and the attitude of ophthalmology on scientific, economic, and social problems in the field of eye care; and (6) to report at least annually on the accomplishments, problems arising, and future plans for the consideration of the Section on Ophthalmology of the American Medical Association at its annual meeting.

No. 79. Resolutions on Relations Between Ophthalmologists and Optometrists

WHEREAS, Patients seek eye examination because of symptoms, the cause of which is frequently one whose investigation and treatment lie within the province of the practice of medicine exclusively; and

WHEREAS, The patient is commonly unable to determine this fact for himself; and

WHEREAS, Some of the public, on occasion, seek the services of an optometrist; and

WHEREAS, Although definitive diagnosis is within the province of the physician alone and the ophthalmologist specifically, nevertheless the nature of the symptoms and the observations of the optometrist should in many cases indicate to him that the patient should be referred for medical care; and

WHEREAS, The indications for consultation with or treatment by other physicians or by the dentist are medical considerations and their determination is the responsibility of the ophthalmologist alone; therefore be it

Resolved, That in the public interest, suitable criteria for such referral by the optometrist to the ophthalmologist should be established; and be it further

Resolved, That the ophthalmologist in accepting such referral accepts the responsibility for determining whether and when the patient can be returned for optometric care; and be it further

Resolved, That it is ethical for an ophthalmologist to indicate to an optometrist who has so referred a patient the nature of the condition in general terms, the nature of his interpretation of the condition to the patient (specifically the terms in which it was described to the patient by the ophthalmologist), and whether or not the patient has been placed under medical care.

No. 80. Resolution on Report of Judicial Council Concerning Dispensing of Glasses

WHEREAS, A considerable proportion of the membership of the Section on Ophthalmology of the American Medical Association has expressed a dissenting voice to the statement included in a recent report of the Judicial Council of the American Medical Association pertaining to the ethics of ophthalmologic dispensing of optical materials; and

WHEREAS, The committee appointed by the executive council of the Section on Ophthalmology of the American Medical Association is fully cognizant of the considerable variation in the optical dispensing services available to the public in the various sections of the country and, in addition, fully recognizes that in certain areas the physician would definitely be remiss in his or her responsibility to his or her patients if he or she did not supply optical materials; and

WHEREAS, This committee is furthermore cognizant of the desirability of the physician being able to provide such services to his or her patients; and

WHEREAS, It is appreciated that ethics is a code of behaviour which is to best serve the interest of the patient; and

WHEREAS, It is the carefully considered opinion of the committee that ophthalmology as a learned medical specialty will, in the long run, best be served if it can be dissociated from the supplying of optical materials as it has separated itself from commercial advertising; and

WHEREAS, The committee feels that it is important to put in proper perspective the relative importance or value of professional to technical service rendered and to emphasize this to the public and our medical colleagues that the physician derives his income from professional services and not from appurtenances related thereto; therefore be it

Resolved, That (*a*) if a free choice of dispensing facilities (opticians) be afforded the patient, and (*b*) if only a reasonable fee is to be charged for the services of fitting, adjusting, delivery, and/or replacement of optical materials over and above their cost to the physician, it is ethical for a physician to supply optical materials whenever in his or her studied opinion it would be in the best interest of the patient; and be it further

Resolved, That the statement of a joint committee of the Section on Ophthalmology of the American Medical Association, the American Academy of Ophthalmology and Otolaryngology, and the American Ophthalmologic Society which was solicited by the Judicial Council and passed by the House of Delegates at the Miami meeting in December, 1954, be disallowed.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Norman A. Welch, Chairman, Massachusetts, presented the following report, which was adopted:

1. Your reference committee considered Resolution No. 78 submitted by Dr. W. L. Benedict of the Section on Ophthalmology and entitled Ophthalmologic-Optometric Relations. Your committee is in sympathy with the aims of this resolution and recommends its adoption.

2. Your reference committee considered Resolution No. 79 introduced by Dr. W. L. Benedict of the Section on Ophthalmology and entitled Relations Between Ophthalmologists and Optometrists. After much discussion and with approval of those present at the meeting the following substitute resolution is offered:

WHEREAS, Although definitive diagnosis of eye disease is within the province of the physician alone and the ophthalmologist specifically, nevertheless the nature of the symptoms and the observations of the optometrist should in many cases indicate to him that the patient should be referred to the ophthalmologist for medical care; and

WHEREAS, The indications for further examination and treatment by physicians or by the dentist are medical considerations and their determination is the responsibility of the physician alone and not of the optometrst; therefore be it

Resolved, That in the public interest, suitable criteria for such referral by the optometrist to the ophthalmologist should be established; and be it further

Resolved, That an ophthalmologist in accepting such referral accepts the responsibility for determining the future eye care of the patient; and be it further

Resolved, That it is proper for an ophthalmologist to indicate to an optometrist who has so referred a patient, the nature of the condition in general terms, the nature of his interpretation of the condition to the patient (specifically the terms in which it was described to the patient by the ophthalmologist) and whether or not the patient has been placed under medical care.

3. Your reference committee also had referred to it Resolution No. 80 introduced by Dr. W. L. Benedict of the Section on Ophthalmology and entitled Report of Judicial Council Concerning Dispensing of Glasses. Inasmuch as this matter has been covered in the first report of this reference committee (see THE JOURNAL, July 9, 1955, page 841), your committee recommends that this resolution be not adopted.

No. 81. Resolutions on Educational Program for Medical Society Executives Conference

Dr. Joseph D. McCarthy, Nebraska, read the following resolutions, which were referred to the Reference Committee on Reports of Board of Trustees and Secretary:

WHEREAS, Most of the larger county medical societies, almost all of the state medical associations, the American Medical Association, and several closely allied national organizations of physicians employ personnel in highly important and technical capacities as full-time executives; and

WHEREAS, It is evident that the executive administration of the central offices of medical organizations is approaching the stature of a profession; and

WHEREAS, More and more organizations within the medical profession at national, state, and local levels are seeking or employing full-time executive officers to direct the operations of their central offices; and

WHEREAS, It is essential that persons employed in these capacities by medical organizations be offered indoctrination and education in medical principles and medical policies and be offered training in the adminstration of the central offices of organized medicine; and

WHEREAS, The Medical Society Executives Conference, which was founded in 1946, now numbers in its membership almost 200 full-time executive employes of county, state, and national medical organizations and now conducts semiannual meetings at the annual and clinical meetings of the American Medical Association; now therefore be it

Resolved, By the House of Delegates of the American Medical Association that the Medical Society Executives Conference be requested to develop a planned and continuing program of indoctrination and refresher courses for the annual education and reeducation of its members and for other present and prospective executive employees of medical organizations; and be it further

Resolved, That the Board of Trustees of the American Medical Association be requested to appropriate the sum of $5,000 to the Medical Society Executives Conference as a working fund to inaugurate such a program; and be it further

Resolved, That county and state medical societies and associations, and other national medical organizations which maintain or contemplate the maintenance of full-time central executive offices be urged to consider the possibility of contributing to the financial support of the Medical Society Executives Conference on an annual dues-paying basis.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Dr. A. H. Aaron, Chairman, New York, presented the following report, which was adopted:

Resolution No. 81 on Educational Program for Medical Society Executives Conference.—Your reference committee is in hearty accord with the objectives of this resolution. Inasmuch as an appropriation of funds is involved, it recommends that the second "resolved" be referred to the Board of Trustees, and that the first and third recommendations be approved.

No. 82. Resolution on Exclusion of Obstetrics and Gynecology from a Straight Internship

Dr. Ralph E. Campbell, Section on Obstetrics and Gynecology, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, On Feb. 4, 1955, the Council on Medical Education and Hospitals withdrew its approval of a straight internship in obstetrics and gynecology while continuing a straight internship in surgery, medicine, pediatrics, and pathology; and

WHEREAS, It was the unanimous opinion of the Section on Obstetrics and Gynecology of the American Medical Association in its meeting of June 8, 1955, that the deletion of obstetrics and gynecology from a straight internship will create a fundamental deficiency in the training of interns and the action is also believed discriminatory in character; therefore be it

Resolved, That the House of Delegates either reverse the decision of Feb. 4, 1955, deleting obstetrics and gynecology from a straight internship or return the matter to the Council on Medical Education and Hospitals for its careful reconsideration.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. Dwight L. Wilbur, Chairman, California, submitted the following report, which was adopted:

Resolution No. 82 on Exclusion of Obstetrics and Gynecology from a Straight Internship.—Your reference committee recommends that this resolution be referred to the Council on Medical Education and Hospitals for its careful consideration.

No. 83. Resolutions on International Labor Organization

Dr. Louis H. Bauer, Past President, New York, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, It has just been reported in the daily press that the American employer delegates to the International Labor Conference in Geneva walked out when employer delegates of Soviet Russia were seated in important committees; and

WHEREAS, There is little doubt that Soviet Russia will use the International Labor Organization, through its technical assistance programs, to further the doctrine of communism, particularly in the underdeveloped countries; and

WHEREAS, The World Medical Association has previously pointed out the danger of the International Labor Organization to the freedom of medicine; and

WHEREAS, The World Medical Association has been instrumental in bringing to the attention of the doctors of the world the philosophy of the I. L. O. and its satellite organization, the International Social Security Association, and the attempts of their spokesmen to encourage taking over the control of medicine by social security bodies, and recommending (1) elimination of all free choice of doctor by the patient, (2) abrogation of the right of the doctor to choose the location of his practice, (3) placing the doctor in the status of a technician governed by labor regulation, and (4) interference in the therapeutic care of the patient; and

WHEREAS, The International Labor Organization has subjected all its medical activities in the field of occupational health to complete lay control; therefore be it

Resolved, By the House of Delegates of the American Medical Association that Congress should be memorialized to cut off all further funds appropriated by the United States for the support of the International Labor Organization, and that steps be taken to cancel the membership of the United States in I. L. O.; and be it further

Resolved, That copies of this resolution be transmitted to the President of the United States, the Secretary of Labor, and all members of the Congress.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Charles G. Hayden, Chairman, Massachusetts, submitted the following report, which was adopted:

Resolution No. 83 on International Labor Organization.—The attitude of the American Medical Association toward the International Labor Organization was established by the House of Delegates in December, 1952, in Denver. At that time the House voted "That this House of Delegates of the American Medical Association go on record as recommending the withdrawal of the United States as a member of the I. L. O."

In connection with this resolution, your reference committee deems it timely to remind this House that the Convention which was adopted by the International Labor Organization in 1952 and which includes a revolutionary and socialistic medical care section was forwarded to the Congress by the State Department in June, 1954. Although the State Department recommended that no action be taken in regard to this Convention because most of its concepts come within the jurisdiction of the states, there is nothing to stop another administration or another Congress from pushing for its enactment. Your committee recommends reaffirmation of the previous action of the House of Delegates with respect to the International Labor Organization.

Distinguished Guests

Dr. George F. Lull, Secretary, announced that a representative of the Philippine Medical Association, Dr. Luis D. Martinez of the Philippine Army Medical Corps, was present.

Dr. Munawar Ali, president-elect of the Pakistan Medical Association, was introduced by the Speaker.

Invitations to Attend Meetings

The following invitations to all members of the House of Delegates were announced by the Speaker:

Los Angeles Medical Convention, Jan. 3-5, 1956, celebrating 85 years of medical progress.

Puerto Rico Medical Association Annual Meeting, Dec. 7-11, 1955, following the Boston Clinical Meeting.

Hawaii Medical Association Centennial Celebration, Honolulu, April 22-29, 1956.

Supplementary Report of Reference Committee on Credentials

Dr. Harlan English, Chairman, Illinois, reported that 194 of a possible 195 delegates had been seated at this session of the House.

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Telegram from Dr. Donald C. Balfour

For the official record, Dr. George F. Lull, Secretary, read the following telegram from Dr. Donald C. Balfour, recipient of the 1955 American Medical Association Distinguished Service Award:

I am still overwhelmed with your message of the action of the House of Delegates in conferring upon me the Distinguished Service Award. The American Medical Association has written an unprecedented chapter in the history of medicine which will inspire future generations to fulfill their obligations to the profession and the public. To receive such an award from those charged with the great responsibility in advancing medical education and practice and research is indeed a great honor, and I wish you would convey to the Board of Trustees and the House my profound appreciation. It is a great disappointment that I cannot be there. My cordial greetings to you and all.

Message from Chairman of Local Committee on Arrangements for Boston Clinical Meeting

Dr. Lawrence R. Dame, Massachusetts, presented the following message from Dr. Frank P. Foster, Chairman of the Local Committee on Arrangements for the Boston Clinical Meeting, Nov. 29-Dec. 2, 1955:

To the House of Delegates: This is to extend to each of you a most cordial welcome to the Clinical Meeting to be held in Boston this coming fall. This meeting for the first time represents an effort to have a multi-state organization sponsor the Clinical Meeting, and the six New England states have been busy during this year to guarantee the success of this meeting. It is our intention to offer you a program which is excellent from the scientific point of view, and it is also our hope to provide the House of Delegates, personally, with a warm welcome and a unique form of entertainment.

In closing, may I add to this invitation a request to each of you to stimulate as much enthusiasm and interest in the meeting in your community as possible, in order to insure another good meeting.

Statement of Board of Trustees on Legal Implications of Resolutions

Dr. Dwight H. Murray, Chairman, Board of Trustees, presented the following statement, which at the suggestion of the Speaker was adopted on motion duly made, seconded, and carried:

It is the understanding of the Board of Trustees that prior to any action on the implementation of resolutions passed by this House the legal implications are to be fully investigated. If there are any indications of legal implications, the Board will delay action and report back to the House.

Invitation to Meet in Chicago in 1960

Dr. Percy E. Hopkins, Illinois, extended an invitation to the Association to hold its 1960 Annual Meeting in Chicago, and the House of Delegates adopted a motion to receive the invitation and refer it to the Board of Trustees to determine its feasibility.

Clerks of Election

The Speaker appointed as Clerks of Election to assist the Tellers Drs. Charles J. Ashworth, Rhode Island; R. A. Benson, Washington; Gerald D. Dorman, New York; Joseph C. Griffith, Wisconsin; Karl S. J. Hohlen, Nebraska; H. Linton January, New Mexico; Robert N. Larimer, Iowa; and Deering G. Smith, New Hampshire.

Election of Officers

The following officers were elected:

President-Elect: Dr. Dwight H. Murray, Napa, Calif.

Vice President: Dr. Millard D. Hill, Raleigh, N. C.

Secretary: Dr. George F. Lull, Chicago.

Treasurer: Dr. J. J. Moore, Chicago.

Speaker, House of Delegates: Dr. E. Vincent Askey, Los Angeles.

Vice Speaker, House of Delegates: Dr. Louis M. Orr, Orlando, Fla.

Members, Board of Trustees: Dr. Leonard W. Larson, Bismarck, N. D.; Dr. Thomas P. Murdock, Meriden, Conn.; Dr. James R. Reuling, Bayside, N. Y.

Member, Judicial Council: Dr. Louis A. Buie, Rochester, Minn.

Members, Council on Medical Education and Hospitals: Dr. Harlan English, Danville, Ill.; Dr. James M. Faulkner, Boston.

Members, Council on Medical Service: Dr. H. B. Mulholland, Charlottesville, Va.; Dr. A. C. Scott, Temple, Texas; Dr. R. B. Chrisman Jr., Miami, Fla.

Members, Council on Constitution and Bylaws: Dr. Britton E. Pickett Sr., Carrizo Springs, Texas; Dr. Warren W. Furey, Chicago.

Election of Affiliate Members

The following persons were elected to Affiliate Membership in the American Medical Association:

American medical missionaries nominated by the Judicial Council:

Dr. Signe Berg, Ping Tung, Taiwan (Formosa).
Dr. Arthur R. Bergman, Koza, Mokolo, French West Africa.
Dr. Roy S. Cornell, Heliopolis, Egypt.
Dr. Dale Gibson Foster, B.P.5, Edea, French Cameroun, West Africa.
Dr. John C. Hayward, APO 59, San Francisco.
Dr. Mildred E. Nordlund, Ping Tung, Taiwan (Formosa).
Dr. Dean B. Olewiler, Bambur via Jos via Lau, British West Africa.
Dr. Verna Lucille Robson, Karachi, Pakistan.
Dr. Joseph Leyburn, Chang Hwa, Taiwan (Formosa).
Dr. Robert E. Whitmoyer, Nigeria, West Africa.

Physicians of adjacent countries nominated by the Judicial Council:

Dr. Joseph R. MacDougal, Ottawa, Canada.
Dr. Theodore Rasmussen, Montreal, Canada.
Dr. Luis A. Vallarino, Panama City, Panama.
Dr. Samuel Gutierrez Vazquez, Mexico City, Mexico.

Scientist allied to medicine nominated by the Section on Preventive and Industrial Medicine and Public Health:

Ira V. Hiscock, New Haven, Conn.

Scientist allied to medicine nominated by the Section on Internal Medicine:

William Cleaver Langston, Little Rock, Ark.

Report of Reference Committee on Rules and Order of Business

Dr. Charles H. Phifer, Illinois, member of the reference committee, presented the following report, which was adopted by a rising vote:

Your Reference Committee on Rules and Order of Business wishes to offer the following resolution:

WHEREAS, The June, 1955, meeting of the American Medical Association has been one of the most interesting and enjoyable meetings ever held, and because of the great amount of details regarding arrangements which were the responsibility of the General Chairman, Dr. David B. Allman, and the various subcommittee chairmen, including the subcommittee on the Woman's Auxiliary, with Mrs. David B. Allman as general chairman; therefore be it

Resolved, That the officers, Board of Trustees, and members of the House of Delegates extend to the various chairmen and members of the local committees their sincere thanks. Thanks are also extended to the members of the Atlantic County Medical Society and the Medical Society of New Jersey and to Mr. Harold Baggs, general manager of the Hotel Traymore, and the management of the various other hotels; to Mr. J. D. Searle and Mr. O'Brien of the Searle Company, for a wonderful luncheon; to Mr. Al Skean of the Convention Bureau; and to the staff of the Auditorium for their interest and help in making this meeting an outstanding success; and be it finally

Resolved, That the members of the House of Delegates express their appreciation by a rising vote of thanks.

Presentation of Newly Elected Officers

Drs. John W. Green and Donald Cass, California, escorted to the platform Dr. Dwight H. Murray, President-Elect, who expressed appreciation for the honor of his election.

Dr. James R. Reuling expressed thanks for his election as Trustee.

Dr. E. Vincent Askey also thanked the House for his elevation to the office of Speaker.

Other newly elected officers who expressed their appreciation were Dr. Louis M. Orr, Vice-Speaker, and Dr. Millard D. Hill, Vice-President.

The House of Delegates adjourned, sine die, at 4:20 p. m., Thursday, June 9.

MINUTES OF THE SCIENTIFIC SECTIONS

SECTION ON ANESTHESIOLOGY

Wednesday, June 8—Morning

The meeting was called to order at 9:12 a. m.

A business meeting was held during which a standing vote of thanks was given to Dr. Henry S. Ruth, Philadelphia, in appreciation of his 14 years' service as the section delegate. The section exhibitors were introduced by Dr. Scott M. Smith, Salt Lake City.

A paper entitled "Fifty Years of Organized Anesthesia" by Drs. Albert M. Betcher, Benjamin J. Ciliberti, Paul M. Wood, and Lewis H. Wright, New York, was presented and was discussed by Dr. Thomas E. Keys, Rochester, Minn.

There was a Symposium on New Agents and Methods for Analgesia and Anesthesia in which the following papers were read and discussed:

"Controllable Analgesia During Surgery with Continuous Drip Meperidine: Analysis of 1,000 Cases," by Drs. H. M. Ausherman, W. K. Nowill, and C. R. Stephen, Durham, N. C. The paper was discussed by Drs. M. Jack Frumin, New York; Melvin S. Kaplan, Boston; and Bernard R. Fink, New York.

"The Use of Chlorpromazine in the Anesthetic Management of 2,000 Patients," by Dr. Ellis K. Hultzman, Camden, N. J. Drs. Barnett A. Greene and A. E. Chiron, Brooklyn, N. Y., and Dr. Daniel C. Moore, Seattle, discussed this paper.

"Steroid Anesthesia: A Report on Its Use in Surgery," by Drs. Francis J. Murphy, Neri P. Guadagni, and Francis L. DeBon, San Francisco. The discussion on this paper was by Drs. Bernard R. Fink, New York; Robert B. Orr, Boston; John S. Lundy, Rochester, Minn.; William S. Howland, New York; and S. Parr, Brooklyn, N. Y.

"The Use of Nisentil-Levallorphan Mixtures for the Supplementation of Nitrous Oxide-Oxygen Anesthesia," by Drs. Francis F. Foldes, Mark Swerdlow, E. Lipschitz, Gertrude Weber, and Leo A. Pirk, Pittsburgh. This paper was discussed by Drs. Clarence L. Hebert, Bethesda, Md.; Henry I. Lipson, Brooklyn, N. Y.; Irving M. Riffin, Upper Montclair, N. J.; and Edith R. Kepes, New York.

"Management of Adrenocortical Insufficiency During Surgery" by Drs. Charles L. Burstein, James A. Nicholas, Charles J. Umberger, and Philip D. Wilson, New York. The discussion was by Drs. D. A. Scholz, Rochester, Minn.; Hrant H. Stone, Philadelphia; and John S. Lundy, Rochester, Minn.

Thursday June 9—Morning

A joint meeting was held with the Sections on Diseases of the Chest, General Practice, Obstetrics and Gynecology, and Pediatrics, which was presided over by the chairman of the Section on Pediatrics, Dr. William Weston Jr., Columbia, S. C.

The program of the joint meeting consisted of a Panel Discussion on Resuscitation of the Newborn Infant, with Dr. Clement A. Smith, Boston, as moderator.

The presentations by the panel were as follows:

"The Importance of Asphyxia Neonatorium: A Statistical Analysis," by Dr. Schuyler G. Kohl, Brooklyn, N. Y.

"Prevention of Asphyxia Neonatorium by the Obstetrician," Dr. Nicholson J. Eastman, Baltimore.

"Prevention of Asphyxia Neonatorium by the Anesthesiologist," Dr. Meyer Saklad, Providence, R. I.

"The Value of Drugs, Oxygen, and Carbon Dioxide as Stimulants to Respiration in the Apneic Infant," Dr. Ralph M. Tovell, Hartford, Conn.

"Morphology of the Newborn Infant's Lungs, as Related to Distensibility, Blood Supply, and Gas Exchange," Dr. Edith Potter, Chicago.

"Pressures and Volumes Involved in Expansion of the Newborn Infant's Lungs," Dr. Richard Day, Brooklyn, N. Y.

"The Role of the Laryngologist in Resuscitation of the Newborn," Dr. Paul H. Holinger, Chicago.

There was a practical discussion by all participants on "Methods of Resuscitating the Newborn Infant."

Friday, June 10—Morning

The following officers were elected: chairman, Dr. John S. Lundy, Rochester, Minn.; vice chairman, Dr. Lewis H. Wright, New York; secretary, Dr. Daniel C. Moore, Seattle; representative to Scientific Exhibit, Dr. Scott M. Smith, Salt Lake City.

The section extended a standing vote of thanks to Dr. John S. Lundy for his years of efficient service as secretary.

A telegram from Dr. George W. Tong, extending greetings to the section, was read, as was also a report on the American Board of Anesthesiology.

A paper on "The Influence of Anesthesia on Infant Mortality Rate in Cesarean Section" was read by Dr. P. C. Lund, Johnstown, Pa., and was discussed by Dr. Carl E. Wasmuth, Cleveland.

A paper entitled "The Twenty-Four Hour Medical Anesthesia Coverage for Obstetric Patients" was read by Dr. John J. Bonica, Tacoma, Wash., and was discussed by Drs. Irving M. Pallin, Brooklyn, N. Y., and Robert A. Hingson Jr., Cleveland.

Dr. Robert T. Patrick, Rochester, Minn., presented a paper entitled "Anesthesia for Patients Undergoing Operations on the Mitral Valve: Review of Four Years' Experience." This paper was discussed by Dr. F. H. Ellis Jr., Rochester, Minn.

Dr. Ralph S. Sappenfield, Miami, Fla., read his Chairman's Address, entitled "Bellafoline in Clinical Anesthesia."

A paper entitled "A Study of the Mortality Rate in a Series of Cholecystectomies With and Without the Use of a Muscle Relaxant" was presented by Drs. Paul H. Lorhan and C. C. Chen, Kansas City, Kan., and was discussed by Drs. Seymour Schotz, Philadelphia, and E. M. Papper, New York.

Drs. Mark R. Knapp and Henry K. Beecher, Boston, presented a paper entitled "An Evaluation of Antiemetic Drugs and Their Effect on Postoperative Nausea, Vomiting, and Retching," which was discussed by Drs. Milton J. Marmer, Beverly Hills, Calif., and Robert D. Dripps Jr., Philadelphia.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

Tuesday, June 7—Morning

The meeting was called to order by the chairman, Dr. Everett C. Fox, Dallas, Texas, at 9 a. m. Several guests were introduced.

The first business meeting was conducted.

Dr. Samuel M. Bluefarb, Chicago, representative to the Scientific Exhibit, reported that 15 exhibits were ready for presentation in the space devoted to dermatology, and that seven exhibits in other sections were directly related to dermatology.

Dr. Robert R. Kierland, delegate, reported on the activities of the House of Delegates. The principal item was the following resolution, which he presented for action by the section:

Resolved, That that section of the American Medical Association heretofore known as the Section on Dermatology and Syphilology henceforth be designated as the Section on Dermatology.

Dr. Kierland moved the adoption of this resolution; the motion was seconded by Dr. Anthony C. Cipollaro, New York, and the membership voted its acceptance unanimously.

Dr. Beatrice M. Kesten, New York, secretary to the American Board of Dermatology, read a report on its activities.

Dr. Herbert Rattner, Chicago, associate editor of the *A. M. A. Archives of Dermatology*, read his report.

Dr. Rudolf L. Baer, New York, chairman of the Committee on Contactants read his report.

Dr. Anthony C. Cipollaro, New York, read the report of the Nominating Committee, as follows: For chairman, Dr. J. Walter Wilson, Los Angeles; for vice chairman, Dr. Ruben Nomland, Iowa City; for secretary, Dr. Clarence S. Livingood, Detroit; for representative on the American Board of Dermatology, Dr. George M. Lewis, New York; for delegate to the House of Delegates, Dr. Robert R. Kierland, Rochester, Minn.; for alternate delegate, Dr. Winfred A. Showman, Tulsa, Okla.; for representative to the Scientific Exhibit, Dr. Samuel M. Bluefarb, Chicago.

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Dr. Francis A. Ellis, Baltimore, read a paper on "Cutaneous Elasticity and Hyperelasticity," prepared in colloboration with William R. Bundick, Baltimore. The discussion was opened by Dr. Sture A. M. Johnson, Madison, Wis., and was continued by Drs. Louis H. Winer, Beverly Hills, Calif.; Alfred Hollander, Springfield, Mass.; and Ellwood C. Weise Sr., Bridgeport, Conn.

Dr. Harold N. Cole Jr., Shaker Heights, Ohio, in colloboration with Dr. Herbert Z. Lund, Greensboro, N. C., presented a paper on "Hemangiopericytoma," which was discussed by Drs. Arthur Purdy Stout, New York; Louis H. Winer, Beverly Hills, Calif.; Francesco Ronchesa, Providence, R. I.; and Alfred M. Hollander, Springfield, Mass.

A Dermatologic Clinico-Pathologic Conference, sponsored by the Pacific Dermatological Society under the direction of Dr. Walter R. Nickel, San Diego, Calif., was conducted with Dr. Herman Beerman, Philadelphia, as moderator. Cases were presented by Drs. James W. Burke, New Orleans; Victor C. Hackney, Riverside, Calif.; Edward P. Cawley, Charlottesville, Va.; Walter R. Nickel, San Diego, Calif.; and Louis H. Winer, Beverly Hills, Calif.

A paper entitled "The Treatment of Hemangioma, Chiefly by Radiation" was read by Dr. George E. Pfahler, Philadelphia, and was discussed by Dr. George C. Andrews, New York.

"A Study of Late Radiation Necrosis Following Roentgen Therapy" was read by Dr. Herbert L. Traenkle, Buffalo, and was discussed by Drs. Robert Stolar, Washington, D. C., and George C. Andrews and Anthony C. Cipollaro, New York.

WEDNESDAY, JUNE 8—MORNING

The meeting was called to order by the chairman, Dr. Everett C. Fox, Dallas, Texas, at 9 a. m. There being no other new or old business, after a call from the floor had brought forth no additional nominations, the entire slate of officers as suggested by the Nominating Committee was unanimously elected.

The vice chairman, Dr. Harry M. Robinson Sr., Baltimore, assumed the chair.

The Chairman's Address, "The Physician's Responsibility to Medical Organizations," was read by Dr. Everett C. Fox, Dallas, Texas.

A Symposium on Lupus Erythematosus was conducted by Dr. Louis A. Brunsting, Rochester, Minn. Dr. John R. Haserick, Cleveland, spoke on "The Skin Manifestations of Lupus Erythematosus"; Dr. Stanley L. Lee, New York, presented the subject of "Laboratory Findings in Systemic Lupus Erythematosus," and Dr. J. Minot Stickney, in collaboration with Drs. Louis A. Brunsting and Gertrude L. Pease, Rochester, Minn., discussed the "Significance of the L. E. Clot Test."

Sitting as a panel, Drs. Brunsting, Haserick, Lee, and Stickney answered some 50 questions about lupus erythematosus from the section membership.

THURSDAY, JUNE 9—MORNING

The meeting was called to order by the chairman, Dr. Everett C. Fox, Dallas, Texas, at 9:10 a. m. Dr. Samuel M. Bluefarb, Chicago, representative to the Scientific Exhibit, reported some awards to exhibitors in the section. The exhibit by Drs. Ralph Luikart II, Santa Barbara, Calif., and Samuel Ayres III and J. Walter Wilson, Los Angeles, was presented on the television program the "March of Medicine," originating from the exhibit hall at Atlantic City. The exhibit on "Microanatomy of the Epidermis and Its Appendages" by Drs. George Hamrick and Harvey Blank, New York, was awarded Honorable Mention.

The vice chairman, Dr. Harry B. Robinson Sr., Baltimore, presided.

Dr. Harry M. Robinson Jr., Baltimore, presented a paper prepared in collaboration with Drs. Morris M. Cohen and Raymond C. V. Robinson, Baltimore, entitled "Simplified Office Mycology." The discussion was opened by Dr. William L. Dobes, Atlanta, Ga., and was continued by Dr. J. Walter Wilson, Los Angeles.

Dr. Rudolf L. Baer, New York, read a paper prepared in collaboration with Drs. Stanley A. Rosenthal, Hyman Rogachefsky, and Dominica Furnari, New York, and Jerome Z. Litt, Cleveland, entitled "Experimental Investigations on the Mechanism Producing Acute Attacks of Fungous Infection of the Feet." Discussion was opened by Dr. J. Lewis Pipkin, San Antonio, Texas, and was continued by Drs. J. Walter Wilson, Los Angeles, Frank E. Cormia, New York, and Adolph Rostenberg, Chicago.

Dr. Victor H. Witten, New York, junior author with Dr. Marion B. Sulzberger, New York, read a paper entitled "Puzzling Persistent Penile Plaques." Discussion was opened by Dr. Arthur B. Hyman, New York, and was continued by Dr. Louis H. Winer, Beverly Hills, Calif.

"Allergic Dermatitis Produced by Inhalant Molds" was presented by Drs. Otis Field Jillson, and Manfred Adami, Hanover, N. H. Discussion was opened by Dr. Adolph Rostenberg, Chicago, and was continued by Drs. Alfred Hollander, Springfield, Mass., and Bernard Appel, Lynn, Mass.

"Promacctin in the Treatment of Dermatitis Herpetiformis" was presented by Dr. Maurice J. Costello, New York. His collaborator was Constance M. Buncke, New York. Discussion was by Dr. Fred M. Jacob, Pittsburgh.

Dr. Bernard Appel, Lynn, Mass., read a paper prepared in collaboration with Drs. Leslie Ohmart, Lynn, Mass., and Robert F. Sterner, Rahway, N. J. Discussion was by Dr. Lemuel P. Ereaux, Montreal, Canada.

The officers for the ensuing year were installed.

SECTION ON DISEASES OF THE CHEST

WEDNESDAY, JUNE 8—AFTERNOON

A business meeting was held at 1:50 p. m., at which the following officers were elected: chairman, Dr. Edward W. Hayes, Monrovia, Calif.; vice chairman, Dr. Edgar T. Mayer, New York; secretary, Dr. John F. Briggs, St. Paul, Minn.; delegate, Dr. Hollis E. Johnson, Nashville, Tenn.; alternate delegate, Dr. J. Winthrop Peabody, Washington, D. C.; representative to Scientific Exhibit, Dr. Edwin R. Levine, Chicago.

The Chairman's Address was presented by Dr. Andrew L. Banyai, Milwaukee.

There was a panel discussion on "The Diagnosis and Treatment of Cardiac Arrhythmias," of which Dr. Hans H. Hecht, Salt Lake City, was moderator, and the participants were Drs. Herrman L. Blumgart, Boston, Maurice Sokolow, San Francisco; Harry Gold, New York; and A. Sidney Harris, New Orleans.

THURSDAY, JUNE 9—MORNING

A joint meeting was held with the Sections on Anesthesiology, General Practice, Obstetrics and Gynecology, and Pediatrics. The minutes of this meeting appear in the minutes of the Section on Anesthesiology.

THURSDAY, JUNE 9—AFTERNOON

There was a joint meeting with the Section on Radiology. The minutes of this meeting appear in the minutes of the Section on Radiology.

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

TUESDAY, JUNE 7—AFTERNOON

A preliminary business meeting was held at 1:30 p. m. to discuss some of the problems of the section. The problems of improving the program and the advisability of having joint programs with other sections were discussed. It was the opinion of the executive committee members present that, since the section is having such good attendance, it should not be modified. Attendance at the meeting last year was good and this year was even better.

The following papers were presented and discussed in a Symposium on Electrocardiography and Vectorcardiography:

"The Present Status of Vectorcardiography," by Drs. Otto H. Schmitt and Ernst Simonson, Minneapolis, discussed by Dr. George E. Burch, New Orleans;

"Vectorcardiography from the Point of View of Clinical Practice," by Dr. Franklin D. Johnston, Ann Arbor, Mich., discussed by Dr. C. C. Wolferth, Philadelphia;

"The Important Recent Advances in Electrocardiography," by Dr. Elliot V. Newman, Nashville, Tenn., discussed by Dr. Daniel A. Brody, Memphis, Tenn.;

"The U Wave," by Dr. Eugene Lepeschkin, Burlington, Vt., discussed by Dr. Borys Surawicz, Philadelphia; and

"The Electrocardiographic Changes in Electrolyte Imbalance," by Dr. Samuel Bellet, Philadelphia, discussed by Dr. David Scherf, New York.

WEDNESDAY, JUNE 8—AFTERNOON

A business meeting was held at which the following officers were elected: chairman, Dr. Thomas P. Findley Jr., Augusta, Ga.; vice chairman, Dr. Harry F. Dowling, Hinsdale, Ill. The secretary, Dr. George E. Burch, New Orleans, was reelected.

It was moved by Dr. Joseph Ross, Los Angeles, that official recognition, thanks, and appreciation of the exhibitors in the Section on Experimental Medicine and Therapeutics be recorded in the minutes of the section. The motion was seconded by Dr. Robert D. Taylor, Marshfield, Wis., and was unanimously approved.

The Minot Lecture on "Clinical States Associated with Alterations of the Hemoglobin Molecule" was delivered by Dr. Harvey A. Itano, Bethesda, Md.

The following papers were included in a Symposium on Pancreatitis:

"Experimental Pancreatitis," by Dr. Morton I. Grossman, Denver, discussed by Dr. James L. A. Roth, Philadelphia;

"Clinical Features of Acute Inflammation of the Pancreas: Analysis of 80 Cases," by Drs. Martin M. Kaiser, Henry L. Bockus, James L. A. Roth, A. Bogoch, and George N. Stein, Philadelphia, discussed by Dr. James T. Priestley, Rochester, Minn.;

"Useful Diagnostic Laboratory Procedures in Pancreatitis," by Dr. Thomas E. Machella, Philadelphia, discussed by Dr. Vince Moseley, Charleston, S. C.; and

"The Medical Management of Pancreatitis," by Dr. Charles A. Jones, New Orleans, discussed by Drs. J. E. Berk and S. G. Meyers, Detroit.

THURSDAY, JUNE 9—AFTERNOON

A joint meeting was held with the Section on Internal Medicine. The minutes of the joint meeting appear in the minutes of the Section on Internal Medicine.

SECTION ON GASTROENTEROLOGY AND PROCTOLOGY

TUESDAY, JUNE 7—MORNING

The meeting was called to order at 9:01 a. m., by the chairman, Dr. Harry E. Bacon, Philadelphia.

A paper entitled "Hiatus Hernia and Related Disorders of the Esophagogastric Junction," by Drs. E. Clinton Texter Jr., Hubbard W. Smith, and Clifford J. Barborka, Chicago, was read by Dr. Texter.

A paper on "Regurgitant Esophagitis" was read by Dr. Herbert W. Schmidt, Rochester, Minn.

Dr. David P. Boyd, Boston, read a paper entitled "Esophagitis, Hiatal Hernia, and Cardiospasm: Surgical Considerations."

These three papers were discussed by Drs. N. C. Hightower, Temple, Texas; Stanley H. Lorber, Philadelphia; Edward B. Benedict, Boston; and Conrad R. Lam, Detroit.

A paper entitled "Papillary Adenomas of the Colon and Rectum: A Clinical and Pathological Study," by Drs. Neil W. Swinton, William A. Meissner, and Wesley A. Soland, Boston, was read by Dr. Swinton, and was discussed by Drs. Louis E. Moon, Omaha, and Walter A. Fansler, Minneapolis.

There was a Panel Discussion on Chronic Ulcerative Colitis, of which Dr. Garnet W. Ault, Washington, D. C., was moderator, and in which the participants were Drs. J. Arnold Bargen, Rochester, Minn.; Joseph B. Kirsner, Chicago; Richard H. Marshak, New York; William A. Meissner, Boston; and Robert A. Scarborough, San Francisco.

WEDNESDAY, JUNE 8—MORNING

A business meeting was held at which Dr. Louis E. Moon, chairman of the Nominating Committee, presented nominations for section officers and representatives, as follows: chairman, Dr. Lowell D. Snorf, Evanston, Ill.; vice chairman, Dr. Robert A. Scarborough, San Francisco; secretary, Dr. Everett D. Kiefer, Boston; representatives to the Scientific Exhibit, Drs. William H. Dearing, Rochester, Minn., and W. H. Bernhoft, Buffalo; members of American Board of Proctology, Drs. Robert A. Scarborough, San Francisco, and Hyrum R. Reichman, Salt Lake City. On motion of Dr. A. W. Martin Marino, duly seconded, and carried, the nominations were closed, the secretary was instructed to cast one ballot for the slate as read.

A paper entitled "Control of Vomiting in the Postoperative Patient with Chlorpromazine" by Drs. C. R. Stephen, Sara J. Dent, L. W. Fabian, and A. Adan, Durham, N. C., was read by Dr. Stephen and was discussed by Dr. John H. Moyer, Houston, Texas.

The Chairman's Address on "Rectal Cancer with Reference to Survival Rate and Sphincter Preservation Employing the Abdominoperineal 'Pull Through' Operation" was read by the chairman, Dr. Harry E. Bacon, Philadelphia.

A paper by Drs. David C. H. Sun and Harry Shay, Philadelphia, entitled "The Value of an 'Optimally Effective Dose' of Anticholinergic Drugs in the Treatment of Peptic Ulcer" was read by Dr. Sun. This paper was discussed by Drs. Harry Barowsky, New York, and J. A. Rider, San Francisco.

A paper entitled "Interpretation of the Intravenous Cholangiogram," by Drs. Robert E. Wise and Richard G. O'Brien, Boston, was read by Dr. Wise, and was discussed by Drs. Herbert M. Stauffer, Philadelphia, and J. E. Berk, Detroit.

A Panel Discussion on Diverticulitis of the Colon was held with Dr. Franz J. Ingelfinger, Boston, as moderator. The panelists were Drs. E. N. Collins, Cleveland; Arthur Finkelstein, Philadelphia; Henry K. Ransom, Ann Arbor, Mich.; and Curtice Rosser, Dallas, Texas.

THURSDAY, JUNE 9—MORNING

Joint Meeting with Section on Pathology and Physiology

The joint meeting was called to order at 9:01 a. m., by Dr. Harry E. Bacon, chairman of the Section on Gastroenterology and Proctology.

A paper on "Carcinoids of the Gastrointestinal Tract" was read by Dr. Merrill O. Hines, New Orleans, and was discussed by Dr. R. B. Turnbull Jr., Cleveland.

A paper entitled "Clinical Observations on Hepatic Fibrosis" by Drs. Carroll M. Leevy, St. Albans, N. Y., and Angelo M. Gnassi and Martin W. Pollini, Jersey City, N. J., was read by Dr. Leevy.

Dr. Hugh A. Edmondson, Los Angeles, read a paper on "Tumors of the Liver in Infants and Children," and this paper was discussed by Drs. Dorothy H. Andersen, New York; James B. Arey and John R. Neefe, Philadelphia; and Arthur W. Wright, Albany, N. Y.

The chairman of the Section on Pathology and Physiology, Dr. S. A. Levinson, Chicago, assumed the chair.

A paper on "Verrucae Accuminatae in the Anorectum (with Consideration of the Cancer Problem)" was read by Dr. H. Mark Young, Los Angeles, and was discussed by Dr. Peter A. Herbut, Philadelphia.

A Clinical-Pathological Conference was held, of which Dr. John R. Schenken, Omaha, was moderator, and the participants were Drs. Henry L. Bockus, Philadelphia; Caleb H. Smith, Scott Air Force Base, Ill.; and Stanley M. Wyman, Boston.

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SECTION ON GENERAL PRACTICE

TUESDAY, JUNE 7—AFTERNOON

A business meeting was held during which Dr. Lester D. Bibler, section delegate, presented a report on the activities of the House of Delegates.

The section's scientific exhibitors were introduced by Dr. Charles E. McArthur, section representative to the Scientific Exhibit.

A paper entitled "A Medical School Department of General Practice" was read by Dr. Robert A. Davison, Memphis, Tenn.

There was a Panel Conference and Symposium on Current Trends and Developments in Therapy as They Apply to General Practice, with Dr. Austin Smith, Chicago, as moderator. The participants were Drs. Walter C. Alvarez, Chicago; William Dameshek, Boston; Perrin H. Long and Thomas H. McGavack, New York; Robert T. Parker, Baltimore; Robert Utterback, Iowa City; Robert B. Greenblatt, Augusta, Ga.; LeRoy H. Sloan, Chicago; and Irving S. Wright, New York.

WEDNESDAY, JUNE 8—AFTERNOON

The following officers were elected: chairman, Dr. I. Phillips Frohman, Washington, D. C.; vice chairman, Dr. George L. Thorpe, Wichita, Kan.; representative to Scientific Exhibit, Dr. Charles E. McArthur, Olympia, Wash. The terms of the delegate and the alternate delegate do not expire until 1956, and that of the secretary until 1958.

Dr. Lowry H. McDaniel, Tyronza, Ark., read his Chairman's Address, entitled "The Heart, Progress, and Vision of Medicine in the 20th Century."

A paper on "Treatment of Essential Hypertension by Improved Adrenal Denervation" was read by Dr. Sherman A. Eger, Philadelphia.

A paper entitled "Photography of Tumors of the Uterine Canal in the Living" was presented by Drs. William B. Norment and C. Henry Sikes, Greensboro, N. C.

Dr. Daniel C. Moore, Seattle, read a paper on "Stellate Ganglion Block."

Dr. Robert J. Needles, St. Petersburg, Fla., read a paper entitled "Education of the Heart Patient."

A paper on "Diagnosis and Treatment of Back Disabilities" was read by Dr. George S. Hackett, Canton, Ohio.

A paper entitled "Terminal Care of the Patient with Inoperable Carcinoma" was presented by Dr. John S. LaDue, New York.

Dr. Lester M. Morrison, Los Angeles, read a paper entitled "A Nutritional Program for the Prolongation of Life in Coronary Atherosclerosis."

THURSDAY, JUNE 9—MORNING

A joint meeting was held with the Sections on Anesthesiology, Diseases of the Chest, Obstetrics and Gynecology, and Pediatrics. The minutes of this meeting appear in the minutes of the Section on Anesthesiology.

SECTION ON INTERNAL MEDICINE

WEDNESDAY, JUNE 8—MORNING

The meeting was called to order at 9 a. m., by the chairman, Dr. Howard P. Lewis, Portland, Ore.

A paper on "External Electric Stimulation of the Heart in Adams-Stokes Disease, Reflex Standstill, and Unexpected Circulatory Arrest" by Drs. Paul M. Zoll, Arthur J. Linenthal, Leona R. Norman, Milton H. Paul, and William Gibson, Boston, was read by Dr. Zoll and was discussed by Drs. Harold N. Segall, Montreal, Canada, and Albert H. Douglas, Jamaica, N. Y.

A paper entitled "Clinical Applications of Human Intramural Electrocardiography" by Drs. Myron Prinzmetal, Rashid A. Massumi, Louis Rakita, Alfred Goldman, and Lois Schwartz, Los Angeles, was read by Dr. Prinzmetal. This paper was discussed by Drs. Tinsley R. Harrison, Birmingham, Ala., and Dr. William Resnik, New Haven, Conn.

The Billings Lecture, entitled "The Price We Pay," was delivered by Dr. David P. Barr, New York. Dr. Barr was introduced by Dr. Walter L. Bierring, Des Moines, Iowa.

A paper on "The Diagnosis and Modern Treatment of Cerebrovascular Diseases" by Drs. Irving S. Wright, Ellen McDevitt, and William T. Foley, New York, was read by Dr. Foley, and was discussed by Dr. Robert G. Siekert, Rochester, Minn.

A Panel Discussion on Treatment of the Common Forms of Arthritis was held, with Dr. W. Paul Holbrook, Tucson, Ariz., as moderator. The participants were Drs. Edward W. Boland, Los Angeles; Joseph J. Bunim, Bethesda, Md.; Frank H. Krusen, Rochester, Minn.; and Thomas McP. Brown, Washington, D. C.

Business Meeting

A luncheon-business meeting of the past chairmen and the present executive committee of the section was held at 12:30 p. m. Those present were Drs. Howard P. Lewis, chairman; Walter L. Bierring; Truman G. Schnabel; Charles T. Stone Sr.; Walter L. Palmer; William D. Stroud; Herrman L. Blumgart; and A. Carlton Ernstene.

The minutes of the meeting of the executive committee on June 22, 1954, were read and approved, with the notation that Dr. Garfield Duncan had not been able to accept the position of representative to the Scientific Exhibit and Dr. John S. Lawrence, Los Angeles, therefore had been appointed in his place.

The following slate of officers was selected for the year 1955-1956: chairman, Dr. Henry M. Thomas Jr., Baltimore; vice chairman, Dr. Ovid O. Meyer, Madison, Wis.; representative to the Scientific Exhibit, Dr. Jerome W. Conn, Ann Arbor, Mich. It was understood that these officers would hold office for a period of one year. The present term of the delegate to the House of Delegates, Dr. Charles T. Stone Sr., and of his alternate, Dr. William D. Stroud, runs until Jan. 1, 1957. The term of the secretary has one more year to run.

Dr. James J. Waring, Denver, was selected as the Billings Lecturer for 1956.

The scientific program for 1956 was discussed, and it was voted that a combined session again be held with the Section on Experimental Medicine and Therapeutics.

There are no vacancies on the board of trustees of the Billings Fund. The present trustees are the members of the executive committee of the Section on Internal Medicine and Drs. Walter L. Bierring, Truman G. Schnabel, and Walter L. Palmer.

The American Board of Internal Medicine submitted the following list of names for approval of the executive committee. From this list will be chosen a representative on the Board from the Section on Internal Medicine to succeed Dr. Henry M. Thomas Jr., whose term expires in June, 1955. The list was as follows: Drs. Herrman L. Blumgart, Boston; George T. Harrell, Gainesville, Fla.; Rudolph Kampmeier, Nashville, Tenn.; Ovid O. Meyer, Madison, Wis.; and Henry B. Mulholland, Charlottesville, Va. The committee approved this list and added the names on the list submitted to the Board in 1954, as follows: Drs. Benjamin M. Baker Jr., Baltimore; George Burch, New Orleans; Willis M. Fowler, Iowa City; Henry T. Ricketts, Chicago; and Howard B. Sprague, Boston.

Dr. William C. Langston, Little Rock, Ark., was nominated for election to Affiliate Membership in the American Medical Association.

Dr. Paluel J. Flagg, president of the Society for the Prevention of Asphyxial Death, Inc., appeared before the committee to present the purposes and program of that society. At the conclusion of his report the executive committee voted to recommend to the Council on Scientific Assembly that a panel discussion on hypoxia be included in the program of the General Scientific Meetings at the Annual Meeting in 1956.

THURSDAY, JUNE 9—AFTERNOON

Joint Meeting with Section on Experimental Medicine and Therapeutics

The joint meeting opened at 1 p. m., with Dr. Hugh R. Butt, chairman of the Section on Experimental Medicine and Therapeutics, presiding.

A paper entitled "Current Concept of Pulmonary Anatomy" was read by Dr. Vernon E. Krahl, Baltimore, and was discussed by Dr. Julius L. Wilson, Philadelphia.

Dr. Edwin R. Levine, Chicago, read a paper on "Some Fundamentals of Respiratory Physiology," which was discussed by Dr. Burgess L. Gordon, Philadelphia.

A paper on "Current Methods of Diagnosis and Treatment of Emphysema" was read by Dr. R. Drew Miller, Rochester, Minn., and was discussed by Dr. George Meneely, Nashville, Tenn.

The chair was assumed by Dr. Howard P. Lewis, chairman of the Section on Internal Medicine.

A paper by Drs. Walter S. Burrage, Herbert C. Mansmann Jr., and John W. Irwin, Boston, entitled "Current Methods of Diagnosis and Treatment of Asthma" was read by Dr. Burrage. This paper was discussed by Dr. John M. Sheldon, Ann Arbor, Mich.

Dr. Ivan D. Baronofsky, Minneapolis, read a paper on "Current Concepts of Pulmonary Edema." This paper was discussed by Dr. Oscar Swineford Jr., Charlottesville, Va.

FRIDAY, JUNE 10—MORNING

The following officers were elected for 1955-1956: chairman, Dr. Henry M. Thomas Jr., Baltimore; vice chairman, Dr. Ovid O. Meyer, Madison, Wis.; representative to Scientific Exhibit, Dr. Jerome W. Conn, Ann Arbor, Mich. The present term of the delegate and alternate delegate runs until Jan. 1, 1957, and that of the secretary until June, 1956.

A paper on "The Clinical Aspects of Hyperinsulinism," by Drs. Harold D. Breidahl, James T. Priestley, and Edward H. Rynearson, Rochester, Minn., was read by Dr. Rynearson, and was discussed by Dr. Francis D. W. Lukens, Philadelphia.

"A New Therapeutic Agent in Adult and Juvenile Myxedema: Dl-Triiodothyronine (DL-TIT)" was the title of a paper by Drs. Thomas F. Frawley, Richard T. Beebe, John C. McClintock, and John Lyons, Albany, N. Y., which was presented by Dr. Frawley. This paper was discussed by Dr. Thomas H. McGavack, New York.

A paper entitled "Anthrax: A Report of One Hundred Fifteen Cases" by Drs. Herman Gold and Frank Rosenberg, Chester, Pa., was read by Dr. Gold and was discussed by Dr. Elwood L. Foltz, Philadelphia.

Dr. Howard P. Lewis, Portland, Ore., read his Chairman's Address entitled "A Look at the Future of Internal Medicine."

A paper on "Thrombophlebitis Migrans and Visceral Carcinoma" was read by Dr. Robert H. Durham, Detroit. This paper was discussed by Drs. J. Earl Estes Jr., Rochester, Minn., and William T. Foley, New York.

There was a Panel Discussion on Diagnosis and Treatment of the Hemolytic Anemias, of which Dr. Cyrus C. Sturgis, Ann Arbor, Mich., was moderator, and the participants in which were Drs. Eugene L. Lozner, Syracuse, N. Y.; Edwin E. Osgood, Portland, Ore.; Joseph F. Ross, Los Angeles; Russell Weisman Jr., Cleveland; and Lawrence E. Young, Rochester, N. Y.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

TUESDAY, JUNE 7—AFTERNOON

The meeting was called to order by the chairman, Dr. Francis W. Davison, Danville, Pa.

The honorary chairman, Dr. Thomas C. Galloway, Evanston, Ill., was introduced and presented a thesis entitled "Progress in Otolaryngology."

A paper on "New Technique in Surgery of the Deviated Nasal Septum" was read by Dr. Irving B. Goldman, New York. This paper was discussed by Drs. Dean M. Lierle, Iowa City, and Sam H. Sanders, Memphis, Tenn.

A paper entitled "Nasopharyngeal Lymphoid Hyperplasia and Its Relation to Hearing Problems" was presented by Dr. Raymond E. Jordan, Pittsburgh. The discussion was by Drs. Peter A. N. Pastore, Richmond, Va.; Kenneth L. Craft, Indianapolis; and Thomas C. Galloway, Evanston, Ill.

A paper by Drs. Daniel C. Baker Jr. and Charles A. Flood, New York, on "Progress in Esophagology" was read by Dr. Baker, and was discussed by Dr. Flood and Dr. Walter H. Maloney, Philadelphia.

A motion picture on "The Trans-Septal-Sphenoid Pituitary Operation" prepared by Drs. Walter E. Heck and Robert C. McNaught, San Francisco, was shown and explained by Dr. Heck, and was discussed by Dr. Oskar Hirsch, Boston.

WEDNESDAY, JUNE 8—AFTERNOON

An executive session was held and a resolution unanimously adopted directing the section delegate, Dr. Gordon F. Harkness, Davenport, Iowa, to urge the House of Delegates to pass a resolution in regard to "definition of dental practitioners in hospitals, defining their activities."

The following officers were elected: chairman, Dr. John R. Lindsay, Chicago; vice chairman, Dr. James W. McLaurin, Baton Rouge, La.; secretary, Dr. Hugh A. Kuhn, Hammond, Ind.; delegate, for two years, Dr. Gordon F. Harkness, Davenport, Iowa; alternate delegate, Dr. Dean M. Lierle, Iowa City; representative to Scientific Exhibit, Dr. Walter E. Heck, San Francisco.

A paper on "Current Concepts of Chronic Attic and Middle Ear Disease" was presented by Dr. Arthur L. Juers, Louisville, Ky., and was discussed by Drs. Fred Harbert, Worton, Mass., and Charles E. Kinney, Cleveland.

Dr. Francis W. Davison, Danville, Pa., read his Chairman's Address entitled "Medical Otolaryngology."

A paper entitled "The Medical Treatment of Ménière's Disease" was presented by Dr. Henry L. Williams, Rochester, Minn.

A paper on "Psychosomatic Aspects of Otolaryngology" was read by Dr. C. Stewart Nash, Rochester, N. Y., and was discussed by Dr. David W. Brewer, Syracuse, N. Y.

A paper on "Bronchography in the Diagnosis of Pediatric Problems" by Drs. Charles F. Ferguson and Carlyle G. Flake, Boston, was read by Dr. Ferguson, and was discussed by Dr. Flake and Dr. Charles M. Norris, Philadelphia.

THURSDAY, JUNE 9—AFTERNOON

Dr. Theodore E. Walsh, St. Louis, read a paper on "The Rational Approach to Immunization of the Upper Respiratory Tract." This paper was discussed by Dr. Harry P. Schenck, Philadelphia.

A paper entitled "Allergic Disease of the Upper Respiratory Tract" was read by Dr. Kenneth L. Craft, Indianapolis, and was discussed by Drs. Russell C. Grove, New York; Herbert P. Harkins, Philadelphia; and Samuel P. Prigas, New York.

Dr. A. Curtis Jones Jr., Boise, Idaho, presented a paper on "Hypothyroidism as a Cause of Headache," which was discussed by Dr. Theodore E. Walsh, St. Louis.

Joint Meeting with Section on Preventive and Industrial Medicine and Public Health

The subject of the joint meeting, which opened at 3:30 p. m., was "It Can Happen to You," being a "mock trial" presided over by Dr. Howard P. House, Los Angeles. The author was Dr. C. Stewart Nash, Rochester, N. Y.; the referee, Atty. Noel S. Symons, Buffalo; counsel for claimant, Atty. Lewis Bloch, New York; counsel for carrier, Atty. Joseph D. Edwards, New York; otologist for claimant, Dr. Nash; and otologist for carrier, Dr. Meyer S. Fox, Milwaukee.

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SECTION ON MILITARY MEDICINE

TUESDAY, June 7—AFTERNOON

The meeting was called to order at 2 p. m., by the chairman, Dr. I. S. Ravdin, Philadelphia.

Dr. I. S. Ravdin, Philadelphia, read his Chairman's Address entitled "The Civilian Doctor and our Future Security."

A paper on "Uremia-Like Symptoms, Not Due to Uremia, in Battle Casualties" was presented by Dr. W. H. Meroney, Washington, D. C., and was discussed by Drs. A. C. Corcoran, Cleveland, and Paul D. Doolan, Oakland, Calif.

A paper entitled "Acute Coronary Insufficiency: Application to Military Medicine" by Drs. Arthur M. Master, Harry L. Jaffe, and Leonard E. Field, New York, was read by Dr. Master. This paper was discussed by Drs. Charles K. Friedberg, New York, and Archie Hoffman, Washington, D. C.

Dr. Lucio C. Gatto, Geneva, N. Y., presented a paper entitled "Handicaps, Motivation, and the Performance of Duty," which was discussed by Drs. Arthur S. Abramson, Bronx, N. Y., and Richard R. Cameron, Fort Dix, N. J.

A paper on "Acute Infectious Hepatitis in the Armed Forces: The Advantages of Ad Lib Bed Rest and Early Reconditioning," by Drs. Thomas C. Chalmers Jr., Washington, D. C.; William E. Reynolds, Boston; Richard D. Eckhardt, Iowa City; Joaquin G. Cigerroa, Laredo, Texas; Norman Deane, New York; Robert W. Reifenstein, Syracuse, N. Y.; Clifford W. Smith, Hines, Ill.; and Charles S. Davidson, Boston, was presented by Dr. Chalmers. This paper was discussed by Drs. W. Paul Havens Jr., and Lester J. Pope, Philadelphia.

Dr. Frank B. Berry, Washington, D. C., presented a "Report of the Office of the Assistant Secretary of Defense."

WEDNESDAY, June 8—AFTERNOON

A business meeting was held during which the following officers were elected: chairman, Rear Admiral H. Lamont Pugh, Washington, D. C.; vice chairman, Dr. Russel V. Lee, Palo Alto, Calif.; secretary, Capt. Cecil L. Andrews, Washington, D. C.; delegate, Col. Charles L. Leedham, Washington, D. C.; alternate delegate, Dr. Charles P. Campbell, Hackensack, N. J.; representative to the Scientific Exhibit, Capt. Robert V. Shultz, Washington, D. C.

A paper entitled "Crash and Live: Need Cars Kill More Soldiers Than Guns?" was read by Dr. Don S. Wenger, Washington, D. C., and was discussed by Drs. Frank H. Mayfield, Cincinnati, and George F. Peer, El Paso, Texas.

A paper on "Response of Human Beings Accidentally Exposed to Significant Fallout Radiation" was presented by Dr. Robert A. Conard Jr., Bethesda, Md. This paper was discussed by Drs. Lee E. Farr, Upton, N. Y., and Carl L. Hansen Jr., Washington, D. C.

Dr. John M. Talbot, Baltimore, read a paper entitled "Breaking the Sound Barrier and Its Effect on the Public," which was discussed by Drs. Aram Glorig, Los Angeles, and Sidney I. Brody, Washington, D. C.

A paper on "Peptic Ulcer: A Major Problem in Military Medicine" was read by Dr. John H. Willard, Philadelphia, and was discussed by Drs. Joseph M. Hayman Jr., Boston, and Benjamin H. Sullivan Jr., San Francisco.

THURSDAY, June 9—AFTERNOON

Joint Meeting with Section on Surgery, General and Abdominal

The joint meeting was held under the co-chairmanship of Dr. I. S. Ravdin, chairman of the Section on Military Medicine, and Dr. Robert M. Zollinger, chairman of the Section on Surgery, General and Abdominal.

A paper on "Concepts of the Provision and Use of Whole Blood in Military and Civilian Defense Emergency," by Drs. William H. Crosby Jr., and Joseph H. Akeroyd, Washington, D. C., was read by Dr. Crosby. This paper was discussed by Drs. John G. Gibson II, Boston, and Mary Sproul, Washington, D. C.

A paper entitled "Management of Injuries to the Thorax" was presented by Dr. Brian Blades, Washington, D. C., and was discussed by Drs. Edward M. Kent, Pittsburgh, and Lawrence M. Shefts, San Antonio, Texas.

Dr. E. L. Caveny, Birmingham, Ala., read a paper entitled "Psychological Reactions in Mass Casualties," which was discussed by Drs. Calvin Drayer, Philadelphia, and Albert J. Glass, Washington, D. C.

A paper on "The Primary Care of Injuries About the Face" was read by Dr. Truman G. Blocker Jr., Galveston, Texas, and was discussed by Dr. Herbert Conway, New York.

A paper entitled "Basic Principles in the Management of Open Fractures" was read by Dr. Oscar P. Hampton Jr., St. Louis. This paper was discussed by Drs. William H. Cassebaum, New York, and Thomas L. Waring, Memphis, Tenn.

A paper on "Modern Concepts in the Treatment of Burns," by Drs. Curtis P. Artz and Harry S. Soroff, Fort Sam Houston, Texas, was read by Dr. Artz, and was discussed by Drs. Henry P. Royster, Philadelphia, and Oakley Park, Chanute Field, Ill.

SECTION ON NERVOUS AND MENTAL DISEASES

TUESDAY, June 7—AFTERNOON

The meeting was called to order at 2:03 p. m., by Dr. Francis J. Braceland, Hartford, Conn., chairman.

A paper on "Auriculotemporal Syndrome," by Drs. W. James Gardner and James W. McCubbin, Cleveland, was presented and was discussed by Dr. E. S. Gurdjian, Detroit; Dr. Francis C. Grant, Philadelphia; and Dr. Gardner.

Dr. Joseph P. Evans, Cincinnati, vice chairman, assumed the chair.

A paper entitled "The Control of Tic Douloureux by Injecting the Gasserian Ganglion with Boiling Water" was read by Dr. Rudolph Jaeger, Philadelphia. This paper was discussed by Dr. William H. Sweet, Boston, and Dr. Jaeger.

Dr. Robert Dean Woolsey, St. Louis, presented a paper on "The Decompression Operation for Trigeminal Neuralgia," which was discussed by Drs. Temple Fay, Philadelphia, and J. Grafton Love, Rochester, Minn.

"Lower Extremity Pain Simulating Sciatica Caused by Tumors of the High Thoracic and Cervical Cord" was the title of a paper presented by Dr. Michael Scott, Philadelphia. This paper was discussed by Drs. A. Earl Walker, Baltimore, and I. S. Wechsler, New York, and Dr. Scott.

Dr. Braceland resumed the chair.

A paper entitled, "The Result of Temporal Lobectomy for the Treatment of Psychomotor Epilepsy" was read by Dr. Arthur A. Morris, Washington, D. C. Discussion of this paper was by Drs. William B. Scoville, Hartford, Conn., and A. Earl Walker, Baltimore, and Dr. Morris.

A paper on "Prefrontal Procaine Injection: A Study of Fourteen Patients with One Year Follow-Up," by Drs. J. Martin Myers, Per-Olaf Therman, Calvin S. Drayer, Manuel M. Pearson, Francis C. Grant, and Lauren Smith, Philadelphia, and Francis E. Nulsen, Cleveland, was read by Dr. Myers. This paper was discussed by Drs. F. A. Freyhan, Farnhurst, Del.; and James P. Cattell and John E. Scarff, New York.

WEDNESDAY, June 8—AFTERNOON

There was a business session during which Dr. Francis M. Forster, Washington, D. C., gave a report regarding legislation on epilepsy, and a resolution on the subject was proposed by Dr. Hans H. Reese, section delegate.

The following officers were elected: chairman, Dr. L. M. Eaton, Rochester, Minn.; vice chairman, Dr. Henry W. Brosin, Pittsburgh; secretary, Dr. Karl O. Von Hagen, Los Angeles; delegate, Dr. Hans H. Reese, Madison, Wis.; alternate delegate, Dr. Francis M. Forster, Washington, D. C.; representative to Scientific Exhibit, Dr. G. Wilse Robinson, Jr., Kansas City, Mo.

Dr. Francis J. Braceland, Hartford, Conn., delivered his Chairman's Address.

A paper on "The Practice of Psychiatry Around the World" was read by Dr. James L. McCartney, Garden City, N. Y., and was discussed by Drs. C. N. Baganz, Lyons, N. J., and Robert S. Bookhammer, Philadelphia, and Dr. McCartney.

A paper entitled "The General Practitioner and the Discharged Mental Patient," by Drs. Kenneth E. Appel and Albert E. Scheflen, Philadelphia, was presented. This paper was discussed by Drs. David J. Flicker, Newark, N. J., and Joseph Roy Guyther, Mechanicsville, Md., and Dr. Appel.

"What Causes Alcoholism" was the title of a paper presented by Dr. Frederick Lemere, Seattle, which was discussed by Drs. Joseph Thimann, Boston, and Harold W. Lovell, New York, and Dr. Lemere.

A paper on "The Use of Chlorpromazine and Reserpine in the Treatment of Emotional Disorders," by Drs. William W. Zeller, Paul N. Graffagnino, Chester F. Cullen, and H. Jerome Reitman, Hartford, Conn., was presented by Dr. Zeller. This paper was discussed by Drs. Paul H. Hoch, New York, and Clyde Brooks, Tuscaloosa, Ala., and Dr. Zeller.

Dr. Jackson A. Smith, Houston, Texas, read a paper entitled "Sororities: A Psychiatric Appraisal," which was discussed by Drs. Leo H. Bartemeier, Baltimore, and Nolan D. C. Lewis, New York, and Dr. Smith.

THURSDAY, JUNE 9—AFTERNOON

A paper on "Use of Phenurone in Epilepsy: Analysis of Fatal Reactions Including a Case Report" was read by Dr. Wallis L. Craddock, Salt Lake City. A discussion prepared by Dr. Francis M. Forster, Washington, D. C., was read by the secretary.

A paper entitled "Epileptic Equivalents in Childhood," by Drs. Frederic T. Zimmerman and Bessie B. Burgemeister, New York, was read by Dr. Zimmerman, and was discussed by Dr. Matthew T. Moore, Philadelphia, and Dr. Zimmerman.

"The Importance of Extraolfactory Components in the Identification and Appreciation of Flavors" was the title of a paper by Drs. Edward C. Clark and Henry W. Dodge Jr., Rochester, Minn., which was presented by Dr. Clark. This paper was discussed by Drs. Roland P. Mackay and Harold C. Voris, Chicago; C. W. Olson, Los Angeles; and Dr. Clark.

Dr. Donald A. Johnson, Memphis, Tenn., read a paper on "Relief of Shoulder-Arm Syndromes by Exercises," which was discussed by Dr. Henry A. Shenkin, Philadelphia, and Dr. Johnson.

A paper on "Lesions of Peripheral Nerves Developing During Coma" was presented by Dr. Clarence W. Olsen, Los Angeles, and was discussed by Dr. Maurice L. Silver, Providence, R. I., and Dr. Olsen.

A paper entitled "The Central Nervous System and Cardiovascular Effects of Rauwolfia Serpentina," by Drs. B. I. Lewis, R. I. Lubin, and L. E. January, Iowa City, was read by Dr. Lewis. This paper was discussed by Drs. Charles Rupp, Philadelphia, and Arnold P. Friedman, New York, and Dr. Lewis.

SECTION ON OPHTHALMOLOGY

TUESDAY, JUNE 7—MORNING

Dr. Erling W. Hansen, Minneapolis, opened the meeting with his Chairman's Address.

Dr. J. W. Tudor Thomas, Cardiff, Wales, delivered the Address of invited Foreign Guest.

A paper on "Fuch's Syndrome of Heterchromic Cyclitis: Analysis of 30 Cases," by Drs. Samuel J. Kimura, Michael J. Hogan, and Phillips Thygeson, San Francisco, was presented. This paper was discussed by Drs. Parker Heath, Rockland, Maine; Torrence A. Makley Jr., Columbus, Ohio; and Harold F. Falls, Ann Arbor, Mich.

A paper entitled "Circulatory Disturbances of the Retina with Particular Reference to Therapeutic Procedure" was read by Dr. Banks Anderson, Durham, N. C., and was discussed by Drs. Arthur J. Bedell, Albany, N. Y., and Arnold Patz, Baltimore.

"Some Instructive Manifestations of Chiasmal Disease: One Case of Pituitary Adenoma, One of Optochiasmic Neuritis (Arachnoiditis) and One of Chiasmal Glioma" was the title of a paper read by Dr. John P. Wendland, Minneapolis. This paper was discussed by Drs. John Woodworth Henderson, Ann Arbor, Mich; Oscar Hirsch, Boston; and Joseph E. Alfano, Chicago.

A paper by Drs. Gustav C. Bahn and James H. Allen, New Orleans, entitled "Therapeutic Studies in Experimental Chemical Injury of the Cornea" was presented, and was discussed by Drs. Hedwig S. Kuhn, Hammond, Ind.; William H. Havener, Columbus, Ohio; and R. D. Harley, Atlantic City, N. J.

A paper on "The Etiology of Retinochoroiditis and Uveitis" was presented by Drs. J. V. Cassady, Carl S. Culbertson, and James A. Bahler, South Bend, Ind., and was discussed by Drs. Harry A. Feldman, Syracuse, N. Y., and Leon Jacobs, Bethesda, Md.

A paper was presented entitled "Glaucoma Associated with Hypermature Cataract; Phakolytic Glaucoma: A Clinico-Pathologic Study of 142 Cases," by Dr. Milton Flocks, San Francisco; Stuart C. Littwin, Teaneck, N. J.; and Lorenz E. Zimmerman, Washington, D. C. This paper was discussed by Dr. S. Rodman Irvine, Beverly Hills, Calif.

"Evaluation of Prednisone and Prednisolone in Ocular Inflammatory Disease" was the title of a paper presented by Drs. John H. King Jr., and John R. Weimer, Washington, D. C. This paper was discussed by Dr. Dan M. Gordon, New York.

WEDNESDAY, JUNE 8—MORNING

Minutes of 1954 meeting approved as printed.

OLD BUSINESS

Committee on Optics and Visual Physiology.—It was voted that paragraph number five be deleted from the Report. This paragraph reads: "The American Committee on Optics and Visual Physiology approves the idea of developing an interprofessional committee on eye care in each state and recommends that the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, the American Academy of Ophthalmology and Otolaryngology and the Association for Research in Ophthalmology contribute $200.00 ($50.00 each) to carry out this work."

Dr. Jaekle proposed an amendment to accept paragraph 27 of this report and the remainder of the report and supplementary report be referred to the executive committee for further action. Paragraph 27 reads: (a) That the American Medical Association continue its sponsorship of the American Committee on Optics and Visual Physiology; (b) that the American Medical Association support the American Committee in the amount of $150.00; and (c) that Dr. Gerald Fonda be reappointed. This amendment was voted upon and passed.

The reports of the following committees were accepted as given:

Committee on the American Board of Ophthalmology.
Registry of Ophthalmic Pathology.
Committee on Scientific Exhibit of the Section on Ophthalmology.
Committee on Museum of Ophthalmic History.
Committee on Nomenclature of the Section on Ophthalmology.
Committee on the American Orthoptic Council.
Committee on Industrial Ophthalmology.
Representative to the College of Surgeons, Board of Governors.
Report of Lucien Howe Fund.
Report of the Representative to the International Congress.
Report of the Delegate to the House of Delegates.
Report of the Knapp Testimonial Fund.

REPORT OF EXECUTIVE COMMITTEE

The following committee appointments are recommended by the executive committee of the Section on Ophthalmology:

American Committee on Optics and Visual Physiology (Joint).—The reappointment of Gerald Fonda for 3 years; the appointment of Luther Kauffman to fill the position left by the resignation of William F. Hughes Jr.; the members will then be Arthur Linksz—term expires 1956; Luther Kauffman—term expires 1957; and Gerald Fonda—term expires 1958.

Committee on American Board of Ophthalmology.—The reappointment of Michael J. Hogan for 4 years; the members will

then be Brittain F. Payne—term expires 1956; John S. McGavic—term expires 1957; John H. Allen—term expires 1958; and Michael J. Hogan—term expires 1959.

Committee on National Museum of Ophthalmic Pathology.—The reappointment of Jonas S. Friedenwald.

Committee on Museum of Ophthalmic History.— The reappointment of Burton Chance, chairman; Hans Barkan; and Frederick C. Cordes.

Committee to National Conference on Medical Nomenclature (Joint).—The reappointment of Conrad Berens.

Committee on American Orthoptic Council (Joint).—The reappointment of Edmond L. Cooper for 3 years; the members will then be Hermann M. Burian—term expires 1956; William C. Owens—term expires 1957; and Edmond L. Cooper—term expires 1958.

Committee on Industrial Ophthalmology (Joint).—The reappointment of Albert D. Ruedemann, chairman; Hedwig S. Kuhn; and Glenn Harrison.

Report of the Committee on the Estimation of Loss of Visual Efficiency was approved and accepted by the executive committee.

Representatives of Section to American College of Surgeons Board of Governors.—We suggest the following three names as nominees from the section to be submitted to the American College of Surgeons in order that the Nominating Committee of the Board of Fellows may select one of these three to be elected by the Board of Governors at the annual meeting: For the term 1956-1959, Albert D. Ruedemann, Detroit; Ralph W. Danielson, Denver, Colo.; and Webb P. Chamberlain Jr., Cleveland.

It was voted to discontinue the Committee on the International Congress.

It was voted to retain Dr. Francis Heed Adler as section representative to the National Committee for Research in Eye Diseases when a new committee is formed.

The executive committee recommends that a cash prize of $250 be awarded for the best paper presented before the section each year and $250 for the best exhibit. The awards will be announced no later than one month after the closing of the scientific session. The selection of the paper will be made by the executive committee, and the best exhibit will be chosen by the committee on judging the scientific exhibits. The money will be given to and for use by the department of ophthalmology of the medical school or the hospital designated by the prize-winning author and will come from the Knapp Fund.

The Executive Committee Report was accepted with the following amendment to the recommendation of the executive committee in reference to a Prize in Ophthalmology. As amended, this would read: "The money will be given to the individual and will come from the Knapp Fund." The recommendation was accepted as amended.

Award of Prize in Ophthalmology was made by Dr. Francis Heed Adler, who stated, "Mr. Chairman, members of the Section, and guests. Each year the Section on Ophthalmology enhances its prestige and increases its stature by singling out one of its members who has made significant contributions to the practice of ophthalmology and awarding him or her a prize known as the Prize in Ophthalmology. In this manner, the section adds another jewel to its crown, so to speak, to which it can point with pride. As senior member of the Executive Committee, it is my privilege to make the presentation of the award for 1955. Your committee has unanimously selected a man who is so well known to you that his name is practically synonymous with the field of ophthalmology, in which he is so distinguished, and to which he has made so many contributions. In fact, when any of us has a patient who presents a problem, we call him in consultation, no matter whether we live in New York, San Francisco, Portland, or Miami; and we can do this day or night, for he has made himself available to us constantly, and is never further away than our library. I will now request Dr. Frank Walsh to come to the platform." Dr. Walsh was escorted to the platform and was given a standing ovation. Dr. Adler continued, "Dr. Walsh, as chairman of the executive committee of the Section on Ophthalmology of the American Medical Association, it gives me great pleasure to award the Prize in Ophthalmology for 1955 because of your distinguished contributions to the field of neuroophthalmology." Dr. Adler then pinned the medal on Dr. Walsh amid applause. Dr. Walsh thanked Dr. Adler and the section for the honor conferred upon him.

NEW BUSINESS

Dr. Brittain Payne recommended that a delegate from the section be appointed to attend the Pan-American Congress of Ophthalmology. The executive committee appointed James H. Allen, New Orleans, as delegate from the section.

RESOLUTIONS PASSED AT SPECIAL EXECUTIVE SESSION JUNE 7, 1955.

1. RESOLVED, That the statement of a joint committee of the Section on Ophthalmology, American Medical Association, the American Academy of Ophthalmology and Otolaryngology, and the American Ophthalmological Society which was solicited by the Judicial Council and passed by the House of Delegates at the Miami meeting, December, 1954, be disallowed.

2. WHEREAS, A considerable proportion of the membership of the Ophthalmological Section of the A. M. A. has expressed a dissenting voice to the recent action of the Judicial Council of the A. M. A. regarding its ruling pertaining to the ethics of ophthalmological dispensing of optical materials; and

WHEREAS, Your committee appointed by the executive council of the Section on Ophthalmology of the A. M. A. is fully cognizant of the considerable variation in the optical dispensing services available to the public in the various sections of the country and in addition, fully recognizes that in certain areas the physician would definitely be remiss in his (or her) responsibility to his (or her) patients if he or she did not supply optical materials; and

WHEREAS, This committee is furthermore cognizant of the desirability of the physician being able to provide such services to his or her patient; and

WHEREAS, It is appreciated that ethics is a code of behaviour which is to best serve the interest of the patient; and

WHEREAS, It is the carefully considered opinion of the committee that ophthalmology as a learned medical specialty will, in the long run, best be served if it can be dissociated from the supplying of optical materials as it has separated itself from commercial advertising; and

WHEREAS, The committee feels that it is important to put in proper perspective the relative importance or value of professional to technical service rendered and to emphasize this to the public and our medical colleagues that the physician derives his income from professional services and not from providing appertanances related thereto; therefore be it

Resolved, That (a) if a free choice of dispensing facilities (opticians) be afforded the patient, and (b) that if only a reasonable fee is to be charged for the services of fitting, adjusting, delivery and/or replacement of optical materials over and above their cost to the physician, it is ethical for a physician to supply optical materials whenever in his or her studied opinion it would be in the best interest of the patient.

3. WHEREAS, There was adopted by the House of Delegates of the American Medical Association in 1950 a resolution declaring it ethical for members to engage in lectures and other measures for the dissemination of information to nonmedical groups; and

WHEREAS, This resolution has been interpreted by some members of the Section on Ophthalmology and by other physicians as permission to teach optometrists; and

WHEREAS, These relations with optometry have led to abuses and harmful use by optometrists of the information thus gained to the public detriment; therefore be it

Resolved, That it is unethical for any doctor of medicine to teach in any school or college of optometry, or to lecture to any optometric organization, or to contribute scientific material to the optometric literature, or in any way to impart technical medical knowledge to nonmedical practitioners.

4. WHEREAS, Optometry has increasingly and widely throughout the United States encroached on the practice of medicine to the detriment of the public; and

WHEREAS, Optometric organizations have caused to be introduced into various state legislatures over a period of many years and increasingly in recent years bills which would permit the practice of ophthalmological medicine and surgery by optometrists; and

WHEREAS, The diagnosis of disease of itself constitutes the practice of medicine; and

WHEREAS, United States Public Law No. 734 requires the several states, in order to participate in the federal program, to accept the opinion of the optometrist as to the cause of blindness in applicants for aid to the blind, thus giving legal recognition to the practice of medicine by unqualified practitioners; who are thereby exposed to prosecution; and

WHEREAS, Optometry has sought to identify itself in the public mind with medicine by approaching civic and governmental agencies in the

guise of qualified experts on matters of every description pertaining to the eye; and

WHEREAS, Optometry has harrassed the practicing ophthalmologist by restrictions and attempted restrictions on the dispensing optician and other ancillary technical workers under the supervision of the physician; and

WHEREAS, For the first time in the United States legislation has been introduced by a nonmedical group to limit the physician in the practice of medicine in that it would forbid the practice of a branch of medicine to all physicians except those who meet certain stipulations; therefore be it

Resolved, That the Section on Ophthalmology of the American Medical Association (1) take the necessary steps to dissolve the National Committee on Eye Care, formerly the Interprofessional Committee on Eye Care; (2) requests that the various state medical and ophthalmological organizations be vigorously supported by the American Medical Association in an unremitting opposition to further encroachment on the field of medicine by optometry or any other nonmedical group; (3) opposes the commissioning of optometrists as such, by any title, in the armed forces, and feels that positive action should be taken to bring about the discontinuance of this practice; and requests that the armed forces provide full medical eye care for all personnel to the end that no member may be subjected to eye care by nonmedical personnel without direction or supervision by an ophthalmologist; (4) requests the American Medical Association to press for revision of Public Law No. 734, part 4—Section 341E, clause 10 to require that certification of blindness be made only by a qualified medical practitioner; (5) bring to the attention of the National Society for the Prevention of Blindness and similar lay agencies concerned with the prevention of blindness and the conservation of or restoration of vision, that the professional aspects of those problems are medical considerations and therefore the concern of the physician and not within the scope of practice of limited practitioners unqualified to deal with diseases of the eye; and be it further

Resolved, That the Section on Ophthalmology of the American Medical Association petitions the House of Delegates of the American Medical Association, in the interests of the public welfare, to request the Board of Trustees of the American Medical Association to appoint a permanent Committee on Medical Eye Care, which committee should be charged with, among others, the following responsibilities: (1) to promote and to prevent limitation of medical eye care; (2) to formulate a policy which will safeguard the public interest relative to possible changes in legislation relating to eye care; (3) to aid the several District of Columbia, state, and regional committees to comprehend the overall problem and to develop the ability and interest to deal with such problems at state levels; (4) to receive information, coordinate, and advise state committees on problems of legislation arising in each state; (5) to prepare suitable material for dissemination to the public and material for dissemination to the medical profession generally, presenting the history of ophthalmology and the attitude of ophthalmology on scientific, economic and social problems in the field of eye care; and (6) to report at least annually on the accomplishments, problems arising, and future plans for the consideration of the Section on Ophthalmology of the American Medical Association at its annual meeting.

5. WHEREAS, Patients seek eye examination because of symptoms, the cause of which is frequently one whose investigations and treatment lie within the province of the practice of medicine exclusively; and

WHEREAS, The patient is commonly unable to determine this fact for himself; and

WHEREAS, Some of the public, on occasion, seek the services of an optometrist; and

WHEREAS, Although definitive diagnosis is within the province of the physician alone and the ophthalmologist specifically, nevertheless, the nature of the symptoms and the observations of the optometrist should in many cases indicate to him that the patient should be referred for medical care; and

WHEREAS, The indications for consultation with or treatment by other physicians or by the dentist are medical considerations and their determination is the responsibility of the ophthalmologist alone; therefore be it

Resolved, That in the public interest, suitable criteria for such referral by the optometrist to the ophthalmologist should be established; and be it further

Resolved, That the ophthalmologist in accepting such referral accepts the responsibility for determining whether and when the patient can be returned for optometric care; and be it further

Resolved, That it is ethical for an ophthalmologist to indicate to an optometrist who has so referred a patient, the nature of the condition in general terms, the nature of his interpretation of the condition to the patient (specifically the terms in which it was described to the patient by the ophthalmologist) and whether or not the patient has been placed under medical care.

Dr. Ralph Pino presented the following statement: " I wish to move for your consideration that a session of the Ophthalmological Section be set aside at the annual and interim meetings of the A. M. A., in addition to the scientific sesions for consideration of ophthalmological problems as relate to organization, education, legislation, economics, and distribution; that these follow the regular form of the scientific sessions calling for papers to pass through the Executive Committee for implementation and procedure." This statement was voted upon and accepted.

Dr. Ralph O. Rychener presented the recommendation that a standing Committee on Public Relations be appointed. This was passed. The Executive Committee appointed the following members for this committee: Ralph O. Rychener, chairman; Charles E. Jaekle; J. Spencer Dryden; Edwin F. Tait; Everett L. Goar; Donald J. Lyle; A. D. Ruedemann; and Tullos O. Coston.

Dr. Derrick Vail presented the motion that the executive committee of the Section on Ophthalmology appoint a committee of three to investigate the matter of eye banks and report back to the section at the next meeting. This was passed. The executive committee appointed the following members: Derrick Vail; Angelos Dellaporta; and Max Fine.

Dr. Brittain Payne presented the motion that the executive committee appoint a committee of five from the section to consider questions of ophthalmology in government services and to report back to the section annually. This was amended to read "civilian members of the section." Motion passed as amended. The executive committee appointed the following members: Brittain Payne; J. H. King Jr.; George L. Tabor Jr.; W. Maxwell Thomas; and James H. Allen.

The Knapp Medal was awarded to David G. Cogan for his paper "Ocular Dysmetria, Flutter-Like Oscillations of the Eyes and Opsoclonus" presented before the section meeting in 1953.

The following nominations for the Committee on the Award of the Knapp Medal were made and the members elected unanimously: Frederick Davis; Harold F. Falls; and William F. Hughes Jr.

The following officers were elected: chairman, Dr. Albert D. Ruedemann, Detroit; vice chairman, Dr. John B. Hitz, Milwaukee; representative to Scientific Exhibit, Dr. Frank W. Newell, Chicago. The secretary, Dr. Harold G. Scheie, Philadelphia, was elected in 1954 for a three year term, and the terms of the delegate and alternate delegate still have a year to run.

A paper entitled "Therapy of Congenital Glaucoma" was read by Dr. E. Norris Robertson Jr., Oklahoma City, and was discussed by Dr. Joseph S. Haas, Chicago.

Drs. George S. Tyner and Edward J. Swets, Denver, presented "Report on Thirteen Eyes with Congenital Glaucoma Treated by Goniopuncture," which was also discussed by Dr. Joseph S. Haas, Chicago.

A paper entitled "Mechanical Changes During Accommodation Observed by Gonioscopy," by Drs. Hermann M. Burian and Lee Allen, Iowa City, was presented. This paper was discussed by Dr. Arthur Linksz, New York.

A paper on "Treatment of Monocular Cataracts" was presented by Dr. Everett L. Goar, Houston, Texas, and was discussed by Drs. John M. McLean, New York, and Warren S. Reese, Philadelphia.

"The Ocular Significance of Intracranial Calcium Deposits" was the title of a paper presented by Drs. Joseph E. Alfano and Harvey White, Chicago. The discussion on this paper was by Dr. Frank B. Walsh, Baltimore.

A paper entitled "Conjunctivitis Associated with Adenoidal-Pharyngeal-Conjunctival Virus Disease," by Drs. Ralph W. Ryan, James F. O'Rourke, Gilbert Iser, Robert J. Huebner, Joseph A. Bell, and Robert H. Parrott, Bethesda, Md., was presented. This paper was discussed by Dr. Alson E. Braley, Iowa City.

THURSDAY, JUNE 9—MORNING

Dr. James H. Doggart, London, England, presented the second Address of Invited Foreign Guest.

A paper entitled "A New Ptosis Operation Utilizing Both Levator and Frontalis" was read by Dr. Robert A. Schimek, Detroit. This paper was discussed by Dr. R. N. Berke, Hackensack, N. J.

A paper on "Experimental Studies on a New Method of Temporary Shortening of the Inner Costs of the Eye" was read

by Dr. Angelos Dellaporta, Buffalo, N. Y., and was discussed by Dr. Dohrmann K. Pischel, San Francisco.

Dr. John W. Smillie, Ann Arbor, Mich., read a paper entitled "Cataract Surgery in Megalocornea: A Case Report of Two Extractions and Review of Cases Since 1931." This paper was discussed by Drs. Derrick Vail, Chicago; Harold F. Falls, Ann Arbor, Mich.; Robert A. Schimek, Detroit; and Frank A. Vesey, Toledo, Ohio.

A paper on "Electromyography of the Extraocular Muscles," by Drs. Goodwin M. Breinin and Joseph Moldaver, New York, was presented and was discussed by Dr. Francis Heed Adler, Philadelphia.

"The Treatment of Glaucoma with Chronic Administration of Diamox" was the title of a paper read by Dr. Bernard Becker, St. Louis, and discussed by Dr. Robert R. Trotter, Boston.

A paper entitled "Diamox in the Treatment of Flat Postoperative Anterior Chamber Following Glaucoma Surgery" was presented by Dr. Harvey E. Thorpe, Pittsburgh. This paper was discussed by Dr. Paul C. Craig, Reading, Pa.

A paper on "Flat Anterior Chambers," by Drs. John G. Bellows and Howard L. Lieberman, Chicago, and Ira A. Abrahamson Jr., Cincinnati, was presented. The discussion on this paper was by Dr. Peter C. Kronfeld, Chicago.

SECTION ON PATHOLOGY AND PHYSIOLOGY

Tuesday, June 7—Morning

The meeting was called to order at 9:15 a. m., by the chairman, Dr. S. A. Levinson, Chicago.

A paper on "Enzyme Inhibitors of Gastric Hydrochloric Acid Secretion: A New Approach in Research on the Therapy of Peptic Ulcer," by Drs. Franklin Hollander and Henry D. Janowitz, New York, was read by Dr. Hollander. This paper was discussed by Drs. Joseph B. Kirsner, Chicago, and J. Earl Thomas, Philadelphia.

Dr. Robert P. Morehead, Winston-Salem, N. C., read a paper entitled "The Origin, Development, and Classification of Epithelial Tumors of the Skin," which was discussed by Dr. Herbert Lund, Greensboro, N. C.

A paper entitled "The Physiological Basis of Transfusion Therapy in Hemophilia," by Drs. K. M. Brinkhous, R. D. Langdell, George D. Penick, R. H. Wagner, and John B. Graham, Chapel Hill, N. C., was presented by Dr. Brinkhous. This paper was discussed by Drs. C. Lockard Conley, Baltimore, and Martin C. Rosenthal, New York.

A paper on "The Pathologic Effects of Smoking on the Larynx," by Drs. Robert F. Ryan, John R. McDonald, and Kenneth D. Devine, Rochester, Minn., was read by Dr. Ryan. Discussion on this paper was by Drs. Frank W. Konzelmann, Washington, D. C., and Robert C. Horn Jr., Philadelphia.

Dr. Russell W. Weller, Philadelphia, read a paper entitled "A Postmortem Study of the Bronchial Mucosa as Related to Occupation, Residence, and Smoking," which was discussed by Drs. A. R. Crane, Philadelphia, and Elwyn L. Heller, Pittsburgh.

A paper on "Inborn Errors of Lipid Metabolism: Clinical, Genetic, and Chemical Aspects" was read by Dr. David Adlersberg, New York, and was discussed by Dr. Edwin F. Hirsch, Chicago.

A paper entitled "Anatomic and Mechanical Studies of the Ileocecal Orifice," by Drs. Alex W. Ulin, Joel Deutsch, and William Shoemaker, Philadelphia, was read by Dr. Shoemaker. This paper was discussed by Dr. Felix G. Fleishner, Boston.

Wednesday, June 8—Morning

A business meeting was held, starting at 9:15 a. m.

Dr. Lall G. Montgomery, Muncie, Ind., section delegate, gave a brief report on the activities of the House of Delegates, calling particular attention to two resolutions that had been introduced, namely, one from California on laboratory advertising, and one from Texas on a national Blood Foundation.

Dr. Frank B. Queen, section representative to the Scientific Exhibit, reported, presenting a list of 29 exhibits sponsored by the section, which he stated was more than those of any other section. He gave special mention to the Fresh Tissue Exhibit.

Dr. Harry J. Corper, Denver, Colo., alternate delegate, offered, in the form of a motion, several recommendations regarding the election of section officers, the length of terms, and positions involved. The motion was seconded and adopted, and the recommendations were referred to the executive committee of the section for consideration.

The following officers were elected: chairman, Dr. Roger D. Baker, Durham, N. C.; vice chairman, H. Russell Fisher, Pasadena, Calif.; delegate, Dr. Lall G. Montgomery, Muncie, Ind.; alternate delegate, Dr. Harry J. Corper, Denver, Colo.; representative to the Scientific Exhibit, Dr. Frank B. Queen, Portland, Ore. The three year term of the secretary, Dr. Edwin F. Hirsch, Chicago, still has one year to run.

Dr. S. A. Levinson, Chicago, presented his Chairman's Address.

A paper on "Myleran (1,4 dimethanesulfonoxybutane) in Chronic Granulocytic Leukemia," by Drs. John Louis, Louis R. Limarzi, and William R. Best, Chicago, was read by Dr. Louis. This paper was discussed by Drs. Chris J. D. Zarafonetis, Philadelphia, and Joseph H. Burchenal, New York.

A paper entitled "Occlusive Vascular Lesions in Sickle Cell Disease," by Dr. L. W. Diggs, Memphis, Tenn., and Dr. Colin F. Vorder Bruegge, Washington, D. C., was presented by Dr. Diggs, and was discussed by Drs. Roland B. Scott and F. K. Mostofi, Washington, D. C.

Dr. F. K. Mostofi, Washington, D. C., read a paper entitled "Interstitial Cell Tumors of Testes," which was discussed by Drs. Harlan I. Firminger, Kansas City, Kan., and Robert E. Sculley, Boston.

A paper on "Comparative Incidence of Cholelithiasis in the Negro and Caucasian Races: A Study of 5,000 Autopsies," by Drs. Firman E. Hardenbergh and Joseph A. Cunningham, Birmingham, Ala., was read by Dr. Cunningham. This paper was discussed by Drs. Charles F. Branch, Lewiston, Maine, and W. A. D. Anderson, Miami, Fla.

A paper entitled "The Pathology of the Conduction System in Acquired Heart Disease: 1. Complete Atrioventricular Block," by Drs. Maurice Lev and Paul Unger, Miami Beach, Fla., was read by Dr. Lev, and was discussed by Dr. Philipp Rezek, Miami, Fla.

Thursday, June 9—Morning

A joint meeting was held with the Section on Gastroenterology and Proctology. The minutes of this meeting appear in the minutes of the Section on Gastroenterology and Proctology.

SECTION ON RADIOLOGY

Tuesday, June 7—Afternoon

The meeting was called to order at 2 p. m. by the chairman, Dr. Laurence L. Robbins, Boston.

A paper on "Radiation Hazards to Personnel in Diagnostic Roentgen Procedures," by Drs. Max Ritvo and G. J. D'Angio, Boston, was read by Dr. Ritvo.

Dr. Milton Friedman, New York, read a paper on "Unavoidable Reactions Following Radical Radiation Therapy."

A paper entitled "Late Follow-Up Studies After the Internal Deposition of Radioactive Materials," by Drs. William B. Looney and Martin Colodzin, Bethesda, Md., was presented by Dr. Looney.

The foregoing three papers were presented in the form of a Symposium on Radiation Hazards, and were discussed by Drs. Bernard Roswit, Bronx, N. Y., and E. Paul Feisler, Winnetka, Ill.

A paper on "Benign Lesions Simulating Bone Tumors," by Drs. Vincent P. Collins and Lois Cowan Collins, Houston, Texas,

was read by Dr. Vincent Collins, and was discussed by Dr. Horace C. Jones, Grand Rapids, Mich.

A paper entitled "X-Ray Findings in Trigeminal Neuralgia," by Drs. W. James Gardner and J. Portugal Pinto, Cleveland, was presented. This paper was discussed by Dr. Paul C. Swenson, Philadelphia.

Dr. William R. Eyler, Detroit, read a paper by himself and Dr. Howard P. Doub, Detroit, entitled "Whipple's Disease: Extraintestinal Manifestations."

A paper entitled "Radiologic Diagnosis of Retained Surgical Sponges," by Dr. Herbert M. Olnick, Macon, Ga., and Drs. H. Stephen Weens and James V. Rogers Jr., Atlanta, Ga., was read by Dr. Olnick. The discussion on this paper was by Drs. Barton R. Young, Germantown, Pa.; Reuben Lavine, Syracuse, N. Y.; and William R. Eyler, Detroit.

Wednesday, June 8—Afternoon

The following officers were elected: chairman, Dr. Leo G. Rigler, Minneapolis; vice-chairman, Dr. Donald S. Childs, Syracuse, N. Y.; representative to Scientific Exhibit, Dr. Richard H. Chamberlain, Philadelphia. The term of the secretary, Dr. Traian Leuceutia, Detroit, has two more years to run, and those of the delegate and alternate delegate one more year each.

Dr. Laurence L. Robbins, Boston, read his Chairman's Address entitled "The Effect of Health Insurance Plans on the Practice and Teaching of Radiology."

There was a Symposium on Newer Contrast Media for Visualization of the Biliary Passages, during which the following papers were presented:

"Experience with Five Oral Cholecystographic Media," by Drs. E. E. Seedorf and W. N. Powell, Temple, Texas, read by Dr. Seedorf.

"Oral Cholecystography with Telepaque," by Drs. Lawrence Reynolds and Harold Fulton, Detroit, read by Dr. Fulton.

"Intravenous Cholecystocholangiography," by Dr. William H. Shehadi, New York.

"Intravenous Cholangiography in the Postcholecystectomy Syndrome," by Drs. John McClenahan, John A. Evans, and Paul W. Braunstein, New York, read by Dr. McClenahan.

The papers in the symposium were discussed by Drs. Robert James Reeves, Durham, N. C.; and Ralph Schlaeger, New York; and Drs. Seedorf, Fulton, Shehadi, and McClenahan.

"The Use of Water-Soluble, Nonabsorbable Radio-Opaque Medium in Gastrointestinal Pathology," was the title of a paper by Drs. Lawrence A. Davis, K. C. Huang, and Everett L. Pirkey, Louisville, Ky., which was read by Dr. Davis.

A paper on "Roentgenocinematography of the Gastrointestinal Tract," by Dr. Russell H. Morgan, Baltimore, was presented.

The papers of Drs. Davis, et al., and Dr. Morgan, were presented as a Symposium on Newer Methods of Roentgenologic Examination of the Gastrointestinal Tract, and were discussed by Dr. Gerard Raap, Miami, Fla.

Thursday, June 9—Afternoon

Joint Meeting with Section on Diseases of the Chest

The joint meeting was opened at 2 p. m., by Dr. Andrew L. Banyai, chairman, Section on Diseases of the Chest.

There was a Panel Discussion on Silent Lesions That are Picked up on Chest Surveys, for which Dr. J. Richards Aurelius, St. Paul, Minn., served as moderator.

The participants in this panel were: internist, Dr. Marsh McCall, New York; roentgenologists, Drs. C. Allen Good Jr., Rochester, Minn., and Carl C. Birkelo, Detroit; surgeons, Drs. Richard H. Overholt, Boston, and William M. Tuttle, Detroit.

Another Panel Discussion on Cardiovascular Diseases was held, of which Dr. Fred Jenner Hodges, Ann Arbor, Mich., was moderator.

The participants in the second panel were: roentgenologists, Drs. André Bruwer, Rochester, Minn., and Charles T. Dotter, Portland, Ore.; surgeons, Drs. Dwight Emary Harken, Boston, and Richard L. Varco, Minneapolis.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

Tuesday, June 7—Afternoon

The meeting was called to order at 2 p. m., by the chairman, Dr. Robert M. Zollinger, Columbus, Ohio.

Dr. Henry K. Beecher, Boston, presented a paper entitled "The Powerful Placebo," which was discussed by Drs. Louis Lasagna, Baltimore, and Arthur S. Krats, Houston, Texas.

A paper on "Studies in Pancreatitis, Sphincteritis, and Choledocholithiasis as Causes of Postcholecystectomy Dyskinesia" was read by Dr. Waltman Walters, Rochester, Minn., and was discussed by Drs. Warren H. Cole, Chicago, and Frank Glenn, New York.

A paper entitled "An Eight Year Study of Pancreatitis and Sphincterotomy," by Drs. John H. Mulholland and Henry Doubilet, New York, was read by Dr. Doubilet, and was discussed by Drs. Waltman Walters, Rochester, Minn., and William A. Altemeier, Cincinnati.

"Primary Subtotal Gastric Resection for Acute Perforated Peptic Ulcers" was the title of a paper read by Dr. J. Dewey Bisgard, Omaha. This paper was discussed by Drs. J. M. Emmett, Clifton Forge, Va.; Michael E. DeBakey, Houston, Texas; and T. C. Kao, Formosa.

A paper on "The Management of Metastatic Mammary Cancer," by Drs. O. H. Pearson, M. C. Li, J. P. Maclean, M. B. Lipsett, and C. D. West, New York, was read by Dr. Pearson. The discussion on this paper was by Drs. B. J. Kennedy, Minneapolis, and William Baker, Boston.

A paper entitled "Estimation of Operative Risk in 1955," by Dr. Carl A. Moyer, St. Louis, was presented, and was discussed by Drs. Henry K. Beecher, Boston; and Walter G. Maddock and Warren H. Cole, Chicago.

Wednesday, June 8—Afternoon

The following officers were elected: chairman, Dr. Waltman Walters, Rochester, Minn.; vice chairman, Dr. Robert E. Gross, Boston; secretary, Dr. Walter G. Maddock, Chicago; delegate, Dr. Grover C. Penberthy, Detroit; representative to Scientific Exhibit, Dr. John H. Mulholland, New York.

Dr. Robert M. Zollinger, Columbus, Ohio, delivered his Chairman's Address, while Dr. John D. Stewart, Buffalo, N. Y., vice chairman, presided.

A paper entitled "The Scientific Basis for the Surgical Treatment of Coronary Artery Disease," by Drs. Claude S. Beck and David S. Leighninger, Cleveland, was presented by Dr. Beck, and was discussed by Drs. George D. Geckeler, Philadelphia; N. A. Antonius, Newark, N. J.; and Edward E. Avery, Chicago.

Dr. Dwight E. Clark, Chicago, read a paper entitled "Radioiodine or Surgery in the Treatment of Hyperthyroidism," which was discussed by Drs. Sidney C. Werner, New York; Earle M. Chapman, Boston; and Toby Levitt, London, England.

A paper on "Cryptorchidism" was presented by Dr. Robert E. Gross, Boston, and was discussed by Drs. C. Everett Koop, Philadelphia, and Robert S. Hotchkiss, New York.

Dr. Robert R. Linton, Boston, read a paper entitled "The Emergency and the Definitive Treatment of Acute Bleeding from Esophageal Varices." This paper was discussed by Drs. Daniel S. Ellis, Brookline, Mass., and C. Stuart Welch, Albany, N. Y.

Thursday, June 9—Afternoon

A joint meeting was held with the Section on Military Medicine. The minutes of the joint meeting appear in the minutes of the Section on Military Medicine.

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THE SCIENTIFIC EXHIBIT AT ATLANTIC CITY

The Scientific Exhibit at the Atlantic City Meeting was the largest in the history of the Association and by many considered the best from a teaching standpoint. There were 350 exhibits. The continuous demonstrations were noted by the patience, perseverance, and endurance of numerous physicians who worked long hours of each day in their booths. An appreciative audience was at all times on hand, at times exceeding 20,000 persons a day.

Special features were popular. The special exhibit on fractures, consisting of five booths, was presented under the auspices of a committee composed of Ralph G. Carothers, M.D., Cincinnati, chairman, Herbert Virgin Jr., M.D., Miami, and Harry B. Hall, M.D., Minneapolis, assisted by 45 surgeons. Exhibit symposiums on arthritis, with 10 exhibits, and on diabetes, with 4 exhibits, attracted large audiences. In connection with the latter, Howard F. Root, M.D., Boston, conducted a question and answer conference and panel discussions on diabetes in an area adjoining the exhibits. A new feature, Queries and Minor Notes, was presented with the cooperation of the section officers and, with more publicity, showed possibilities of value. In addition to the above, several sections had special features including anesthesiology, pulmonary function testing, teaching in general practice, physical examinations of physicians, fresh tissue pathology, a flying infirmary, and a civilian defense hospital. There were general discussions of urology exhibits on two days in the exhibit hall.

Six medals were awarded to the best exhibits in the Scientific Exhibit as follows:

HEKTOEN GOLD MEDAL to Henry Swan, Sylvan Baer, Emil Blair, Arthur Prevedel, Vernon Montgomery, and Strother Marshall, University of Colorado Medical Center, Denver, for the exhibit on General Hypothermia in Surgery.

HEKTOEN SILVER MEDAL to George D. Snell, Nathan Kaliss, and Andrew A. Kandutsch, R. B. Jackson Memorial Laboratory, Bar Harbor, Maine, for the exhibit on Experimental Procedures for Inducing Acceptance of Tumor Homografts.

HEKTOEN BRONZE MEDAL to John S. LaDue and Felix Wroblewski, Sloan-Kettering Institute, Research Division of Memorial Center, New York, for the exhibit on Serum Glutamic Oxalecetic Transaminase Variations in Heart and Liver Diseases.

BILLINGS GOLD MEDAL to H. W. Schmidt, F. H. Ellis, A. M. Olsen, J. H. Grindlay, and A. H. Bulbulian, Mayo Clinic and Mayo Foundation, Rochester, Minn., for the exhibit on Esophagitis: A Common Condition Frequently Overlooked.

BILLINGS SILVER MEDAL to B. M. Gasul, E. H. Fell, H. G. Bucheleres, C. J. Marienfeld, Gershon Hait, R. F. Dillon, P. G. Szanto, and Maurice Lev, Hektoen Institute for Medical Research, Cook County Children's Hospital, Presbyterian Hospital, and University of Illinois College of Medicine, Chicago, for the exhibit on Angiocardiography in Normal and Abnormal Hearts.

BILLINGS BRONZE MEDAL to Robert J. Bolt, O. T. Mallery Jr., and C. J. Tupper, University of Michigan, Ann Arbor, Mich., for the exhibit on Periodic Health Appraisal: Methods and Results of Examinations.

The Committee on Awards was composed of William B. Condon, M.D., Denver, chairman; J. Scott Butterworth, M.D., New York; Donovan C. Browne, M.D., New Orleans; John R. Schenken, M.D., Omaha; and Walter Scott, M.D., Los Angeles.

Certificates of Merit and Honorable Mention were awarded to exhibits in each section as noted below.

Anesthesiology.—The section on anesthesiology celebrated 50 years of organized anesthesia with a special exhibit. There were 14 exhibits presented by the section, with awards as follows:

Certificate of Merit to John Adriani, William L. Berson, and Morton Phillips, Louisiana State University School of Medicine and Charity Hospital, New Orleans, for the exhibit on Silent Regurgitation and Aspiration During Operation.

Honorable Mention to C. E. Wasmuth and Otto Glasser, Cleveland Clinic, Cleveland, for the exhibit on Blood Volume Determinations for Anesthesia.

The representative to the Scientific Exhibit was Scott M. Smith, M.D., Salt Lake City.

Dermatology and Syphilology.—The section on dermatology and syphilology presented 15 exhibits, with awards as follows:

Certificate of Merit to Sidney Olansky, John C. Cutler, Evan W. Thomas, Bernard I. Kaplan, Lopo deMello, and Harold J. Magnuson, U. S. Department of Health, Education, and Welfare, Public Health Service, Washington, D. C., for the exhibit on Inoculation Syphilis in Human Volunteers.

Honorable Mention to Herman Pinkus and Catherine Heise Steele, Detroit Institute of Cancer Research and Wayne University College of Medicine, Detroit, for the exhibit on Structure and Dynamics of the Human Epidermis.

The section representative was Samuel M. Bluefarb, M.D., Chicago.

Diseases of the Chest.—The section on diseases of the chest presented a special exhibit on Pulmonary Function Testing, which was very popular. There were 15 other exhibits, 3 of which received awards.

Certificate of Merit to Conrad R. Lam, Robert F. Ziegler, John W. Keyes, and Leo F. Kenney, Henry Ford Hospital, Detroit, for the exhibit on Morphology of the Heart Before and After Intracardiac Surgical Procedures.

Honorable Mention to Alvan L. Barach, Hylan A. Bickerman, and Gustav J. Beck, Columbia-Presbyterian Medical Center, New York, for the exhibit on Prednisone in Bronchial Asthma, Pulmonary Emphysema, and Pulmonary Fibrosis.

Honorable Mention to Dwight E. Harken, Harrison Black, and Hugh E. Wilson, Peter Bent Brigham Hospital, Boston, for the exhibit on the Surgical Treatment of Mitral Stenosis and Mitral Insufficiency.

Dr. Edwin R. Levine was the section representative.

Experimental Medicine and Therapeutics.—The section on experimental medicine and therapeutics had 20 exhibits. Joseph F. Ross, M.D., Los Angeles, was the section representative. There were three awards as follows:

Certificate of Merit to Myron Prinzmetal, Alfred Goldman, Rashid Massumi, Lois Schwartz, Rexford Kennamer, Louis Rakita, and Jean-Louis Borduas, Cedars of Lebanon Hospital, Los Angeles, and City of Hope Hospital, Duarte, Calif., for the exhibit on Intramural Electrocardiography.

Honorable Mention to R. P. Walton, Medical College of South Carolina, Charleston, S. C., for the exhibit on Direct Measurement of Heart Force Changes Produced by Drugs.

Honorable Mention to William P. Boger, Norristown State Hospital, Norristown, Pa., and Richard T. Smith, Benjamin Franklin Clinic, Philadelphia, for the exhibit on Gout and Probenecid.

Gastroenterology and Proctology.—The section on gastroenterology and proctology included in its program 10 exhibits, 3 of which received awards, including the Billings Gold Medal (mentioned above).

The Certificate of Merit to Joseph M. Gambescia, Alexander W. Ulin, Charles M. Thompson, and William C. Shoemaker, Hahnemann Hospital, Philadelphia, for the exhibit on Sodium Dehydrocholate in the Diagnosis of Biliary Tract Disease.

Honorable Mention to Franz J. Ingelfinger, John T. Farrar, and Philip Kramer, Boston, for the exhibit on Electronic Analysis of Gastrointestinal Sounds in the Measurement of Gastrointestinal Motility and the Effect of Drugs.

Section representatives to the Scientific Exhibit were William H. Dearing Jr., M.D., Rochester, Minn., and J. P. Nesselrod, M.D., Evanston, Ill.

General Practice.—The section on general practice featured a special exhibit on "A Medical School Department of General Practice" by Robert A. Davison, M.D., and L. F. Rittelmeyer Jr., M.D., Memphis. Among other features, the section promoted yearly physical examinations for physicians, more than a thousand of whom had chest x-rays and electrocardiograms made at the meeting. This drew a special commendation from the Committee on Awards. Other awards among the exhibits shown were as follows:

Certificate of Merit to H. E. Nieburgs, Cytology Center, Beth-El Hospital, Brooklyn, N. Y., for the exhibit on Recent Advances in Cytological Techniques.

Honorable Mention to L. E. Harris and P. R. Lipscomb, Mayo Clinic and Mayo Foundation, Rochester, Minn., for the exhibit on Congenital Dysplasia and Dislocation of the Hip.

There were 21 exhibits shown by the section. Charles E. McArthur, M.D., Olympia, Wash., was the section representative.

Internal Medicine.—The section on internal medicine promoted 27 exhibits of which 4 received awards including the Hektoen Bronze Medal (mentioned above). They were as follows:

Certificate of Merit to R. G. Sprague, J. T. Priestley, Waltman Walters, R. V. Randall, R. M. Salassa, and D. A. Scholz, Mayo Clinic and Mayo Foundation, Rochester, Minn., for the exhibit on Cushing's Syndrome.

Honorable Mention to Joseph T. Roberts, University of Buffalo School of Medicine and Veterans Administration Hospital, Buffalo, N. Y., for the exhibit on Heart Pain: Its Mechanisms and Relief.

Honorable Mention to I. J. Greenblatt, T. D. Cohn, David Spain, and Leo Gitman, Beth-El Hospital, Brooklyn, N. Y., for the exhibit on Current Concepts of Atherosclerogenesis: A Study in Dynamics.

Dr. Joseph F. Ross, Los Angeles, was the section representative.

Laryngology, Otology, and Rhinology.—The section on laryngology, otology, and rhinology presented 10 exhibits with two awards.

Certificate of Merit to Francis L. Weille, John W. Irwin, Herbert C. Mansmann Jr., Mary Gilchrist, and Samuel R. Gargano, Massachusetts General Hospital, Boston, for the exhibit on the Small Blood Vessels of the Spiral Ligament and Stria Vascularis of Mammals.

Honorable Mention to Julius Lempert and Dorothy Wolff, Lempert Institute of Otology and Lempert Research Foundation, Inc., New York, for the exhibit on Meniere's Disease: New Theory for the Correlation of Its Pathology to the Symptomatology.

The representative to the Scientific Exhibit was Walter E. Heck, M.D., San Francisco.

Military Medicine.—The section on military medicine presented 13 exhibits, including a special feature "The Flying Infirmary," complete with 36 beds, which was located on the beach in front of the auditorium. It was given special commendation by the Committee on Awards. Other awards were given to two exhibits.

Certificate of Merit to David V. L. Brown and Heinrich W. Rose, United States Air Force School of Aviation Medicine, Randolph Air Force Base, Texas, for the exhibit on Chorioretinal Lesions Due to Thermal Radiation from Atomic Bombs.

Honorable Mention to William B. Looney, and Martin Colodzin, U. S. Naval Hospital, National Naval Medical Center, Bethesda, Md., for the exhibit on Late Effects of Internally Deposited Radioactive Materials.

The section representative was Allen D. Smith, M.D., Washington, D. C.

Nervous and Mental Diseases.—The section on nervous and mental diseases had 15 exhibits, with two awards.

Certificate of Merit to Rudolph J. Jaeger, Jefferson Medical College and Hospital, and William H. Whiteley, Wills Eye Hospital, Philadelphia, for the exhibit on Treatment of Tic Douloureux by the Injection of Boiling Water into the Gasserian Ganglion.

Honorable Mention to Arthur A. Morris, Washington, D. C., for the exhibit on Results of Temporal Lobectomy for Psychomotor Epilepsy.

G. Wilse Robinson Jr., M.D., Kansas City, Mo., was the section representative.

Obstetrics and Gynecology.—The section on obstetrics and gynecology had 19 exhibits of which 3 received awards.

Certificate of Merit to Frederick H. Falls and Charlotte S. Holt, University of Illinois College of Medicine and Illinois State Department of Public Health, Chicago, for the exhibit on Female Sterility.

Honorable Mention to Milton L. McCall, Louisiana State University School of Medicine, New Orleans, for the exhibit on Cerebral Blood Flow and Metabolism in Toxemia of Pregnancy.

Honorable Mention to A. Clair Siddall, Oberlin, Ohio, for the exhibit on A New Frontier in Private Practice.

The representative to the scientific exhibit from the section was Frederick H. Falls, M.D., Chicago.

Ophthalmology.—The section on ophthalmology had eight exhibits. The Section Exhibit Committee was composed of William F. Hughes, M.D., Chicago, chairman; Walter H. Fink, M.D., Minneapolis; and Donald J. Lyle, M.D., Cincinnati. There were two awards.

Certificate of Merit to H. M. Burian, Alson E. Braley, and Lee Allen, University Hospitals, Iowa City, for the exhibit on A New Concept of the Development of the Angle of the Anterior Chamber of the Human Eye.

Honorable Mention to Lorenz E. Zimmerman and John H. Bickerton, Armed Forces Institute of Pathology, Washington, D. C., and Helenor Campbell Wilder, San Francisco, for the exhibit on Specific Clinicopathological Types of Granulomatous Inflammation.

Orthopedic Surgery.—The section on orthopedic surgery had eight exhibits of which two received awards as follows:

Certificate of Merit to David M. Bosworth, J. W. Fielding, Lawrence Demarest, and Mario Bonaquist, St. Luke's and Sea View hospitals, New York, for the exhibit on Iproniazid-Marsilid in the Treatment of Bone and Joint Tuberculosis.

Honorable Mention to Norman L. Higinbotham, Bradley L. Coley, and Kenneth C. Francis, Memorial Hospital, New York, for the exhibit on Plasma Cell Myeloma.

J. Vernon Luck, M.D., Los Angeles, was the section representative.

Pathology and Physiology.—The section on pathology and physiology presented the special exhibit on fresh tissue pathology that drew large crowds at all times. It was shown under the chairmanship of A. Reynolds Crane, M.D., Philadelphia, and Milton Ackerman, M.D., Atlantic City, with many other pathologists participating. There were 28 other exhibits, with three awards, including the Hektoen Silver Medal (mentioned above).

Certificate of Merit to Colin F. Vorder Bruegge, Armed Forces Institute of Pathology, Washington, D. C., and L. W. Diggs, University of Tennessee College of Medicine, Memphis, Tenn., for the exhibit on Vascular Occlusive Lesions in Sickle Cell Disease.

Honorable Mention to C. George Tedeschi, Bernard M. Wagner, and K. C. Pani, Division of Pathology and Cardiovascular Research Institute, Hahnemann Medical College and Hospital, Philadelphia, for the exhibit on the Problem of Subclinical Rheumatic Carditis.

The representative to the Scientific Exhibit was Frank B. Queen, M.D., Portland, Ore.

Pediatrics.—The section on pediatrics showed 18 exhibits with three awards including the Billings Silver Medal (mentioned above).

Certificate of Merit to William L. Riker, Arthur DeBoer, Thomas G. Baffes, and Willis J. Potts, Children's Memorial Hospital, Chicago, for the exhibit on Surgical Treatment of Congenital Cardiovascular Anomalies.

Honorable Mention to Keith E. Kenyon, University of Southern California School of Medicine, and Curt W. Greiner, Greiner Glassblowing Laboratory, Los Angeles.

The section representative was F. Thomas Mitchell, M.D., Memphis, Tenn.

Physical Medicine and Rehabilitation.—The section on physical medicine and rehabilitation had 13 exhibits with two awards.

Certificate of Merit to Walter J. Treanor, Raoul C. Psaki, Olena M. Cole, John J. Keyes, and Carus S. Hicks, Letterman Army Hospital, San Francisco, for the exhibit on Restitution of Function Following Hemiplegia.

Honorable Mention to Hans Kraus, Kurt Hirschhorn, Bonnie Prudden Hirschland, and Sonja Weber, New York, for the exhibit on Hypokinetic Disease.

The representative to the Scientific Exhibit was Donald A. Covalt, M.D., New York.

Preventive and Industrial Medicine and Public Health.—The section on preventive and industrial medicine and public health presented 14 exhibits, two of which received awards including the Billings Bronze Medal (mentioned above).

The Certificate of Merit to Marvin A. Epstein and Gustave Freeman, Chemical Corps Medical Laboratories, Army Chemical Center, Md., for the exhibit on Diagnosis and Treatment of Intoxication from Organic Phosphorus Insecticides.

The representative to the Scientific Exhibit was Paul A. Davis, M.D., Akron, Ohio.

Radiology.—The section on radiology participated with 15 exhibits, 2 of which received awards:

The Certificate of Merit to R. Kenneth Loeffler, Vincent P. Collins, C. T. Teng, Walton West, and Rene Mastrovito, Baylor University College of Medicine, Houston, Texas, for the exhibit on Radioactive Iron Studies for the Evaluation of Hematopoietic Function.

Honorable Mention to Gould A. Andrews, Ralph M. Kniseley, and Marshall Brucer, Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tenn., for the exhibit on Radioactive Colloidal Gold in the Treatment of Effusions Resulting from Neoplasms.

The representative to the Scientific Exhibit was Richard H. Chamberlain, M.D., Philadelphia.

Surgery, General and Abdominal.—The section on surgery, general and abdominal presented 27 exhibits with five awards including the Hektoen Gold Medal (mentioned above).

The Certificate of Merit to C. Walton Lillehei, Morley Cohen, Herbert E. Warden, Raymond C. Read, Joseph B. Aust, Richard A. DeWall, Newell R. Ziegler, Gilbert S. Campbell, E. B. Brown, Norman W. Crisp Jr., and Richard L. Varco, University of Minnesota Hospitals, Minneapolis, for the exhibit on Direct Vision Intracardiac Surgical Correction of Congenital Heart Defects.

Certificate of Merit to Claude S. Beck and David S. Leighninger, University Hospitals, Cleveland, for the exhibit on Operations for Coronary Artery Disease.

Honorable Mention to Charles V. Meckstroth, Karl P. Klassen, and John Patrick Crawford, Ohio State University Hospital, Columbus, Ohio, for the exhibit on Cinematographic Studies of the Cardiac Valves.

Honorable Mention to Charles A. Hufnagel and Pierre J. Rabil, Georgetown University Hospital, Washington, D. C., for the exhibit on Surgical Treatment of Obliterative Arterial Disease and Arterial Aneurysms.

The representative to the Scientific Exhibit was John H. Mulholland, M.D., New York.

Urology.—The section on urology had eight exhibits, one of which received an award.

Honorable Mention to Roger Baker, Georgetown University School of Medicine, Washington, D. C., for the exhibit on Ground Substance and Renal Calcification. On two afternoons, discussions of all the exhibits on urology were held in the exhibit area by Lowrain E. McCrea, M.D., Philadelphia, and William W. Scott, Baltimore.

The Section Exhibit Committee was composed of Roger W. Barnes, M.D., Los Angeles, chairman; George H. Ewell, Madison, Wis.; and Norris J. Heckel, Chicago.

Miscellaneous Topics.—The section on miscellaneous topics showed 15 exhibits on a variety of subjects.

The Improvised Hospital for Civilian Defense on the third floor of Convention Hall was presented by the Federal Civil Defense Administration and included all facilities for a 200-bed hospital.

TELEVISION AND MOTION PICTURES

Colored television and motion pictures were shown in adjacent areas at the Atlantic City Meeting and brought out interesting contrasts. Both used the same audiovisual method of presentation. The former appeared on the screen "live" and included good and poor scenes alike, while the latter consisted of films selected for their general excellence after careful previews.

Color television was sponsored by Smith, Kline & French Laboratories and originated at the University of Pennsylvania Hospital in Philadelphia. Thirty demonstrations were brought to Convention Hall by closed circuit, several of the demonstrations being followed by discussions. The committee in charge consisted of Drs. V. Earl Johnson, Atlantic City, and I. S. Ravdin, Philadelphia. Scenes from Convention Hall were shown one evening by television on a national hookup.

Motion pictures were arranged under the auspices of the Committee on Motion Pictures and Medical Television. Thirty-eight films were shown on a definite schedule each day, with discussions by the authors on many occasions. An outstanding contribution was the motion picture symposium on hernia conducted one evening with Dr. Warren H. Cole, Chicago, as moderator. Five films were shown, each of which was discussed by the author.

MEDICAL NEWS

CALIFORNIA

Study in Prevention of Blindness.—A $144,036 grant for a three year study in the prevention of blindness in California has been given the state department of public health by the W. K. Kellogg Foundation. The study will attempt to establish the prevalence of the various forms of blindness and the conditions leading to blindness and to investigate the nature of the various forms of blindness. It is planned to use available sources of information, develop additional sources, conduct surveys among schools and occupational groups, and explore the potentialities for early detection of blindness conditions in the physician's office. The program will be administered by Dr. Lester Breslow, San Francisco, chief of the bureau of chronic diseases.

University News.—Plans for the construction of a basic science building were announced by the University of Southern California School of Medicine April 28 in Los Angeles. At the dinner launching a fund-raising campaign, over $500,000 was pledged by faculty, alumni, and students of the medical school and community donors. Students announced completion of their campaign with a total of $250,000 in pledges to be paid by the end of three years of practice. A $100,000 gift was received from the Michael J. Connell Charities, Ltd., of Los Angeles, and $100,000 was given by a private donor. The five story building will consolidate the teaching and research activities on one medical campus and will include laboratories and classrooms for biochemistry, physiology, pharmacology, pathology, microbiology, and anatomy. It will be erected on a 10 acre site near Los Angeles County Hospital, where a medical research building has already been built. Future building plans for the medical campus include another unit of the basic science building, a student commons, a library, and an auditorium.

Personal.—Dr. Harry A. Wilmer, Palo Alto, who is serving as a lieutenant commander in the Naval Reserve at U. S. Naval Hospital, Oakland, was chosen by the Navy to address the fourth Commonwealth Health and Tuberculosis Conference June 23 in London, England. His paper was entitled "The Use of Sound Stimuli in Group Therapy." Dr. Wilmer is on leave as clinical assistant professor of psychiatry at Stanford University School of Medicine, San Francisco.——Dr. Morse J. Shapiro, lecturer in medicine at the University of Southern California School of Medicine, Los Angeles, has received one of the two first annual Outstanding Achievement awards given by the University of Minnesota Medical School, Minneapolis. Dr. Shapiro was credited with establishing in 1922 the first heart hospital in the nation while he was practicing in Minneapolis. He is now in charge of five heart clinics conducted by the Los Angeles Board of Education in cooperation with the PTA. Dr. Shapiro is also a consultant at Los Angeles Childrens Hospital, chief of the pediatrics staff at Cedars of Lebanon Hospital, and a member of the board of directors and the cardiac clinics committee of the Los Angeles County Heart Association.

ILLINOIS

Society News.—The Illinois Psychiatric Society recently elected the following officers: Dr. Roy R. Grinker, Chicago, president; Dr. George L. Perkins, Chicago, vice-president; and Dr. Samuel Burack, Chicago, secretary-treasurer.

Chicago

Dr. Loyal Davis Honored.—The Council of the Royal College of Surgeons of England has announced that Dr. Loyal Davis, chairman of the department of surgery at the Northwestern University Medical School, has been awarded an honorary fellowship. The fellowship, awarded to surgeons who have made significant contributions to their field, has been bestowed on only one other Chicago surgeon, the late Dr. John B. Murphy. Dr. Davis, editor of *Surgery, Gynecology and Obstetrics,* is attending surgeon at the Veterans Administration Research Hospital. He served as a colonel in the U. S. Army Medical Corps and as consultant on neurological surgery to the chief surgeon of the European Theater of Operations.

Woodyatt Lectures.—The first in a series of annual lectures in memory of Dr. Rollin Turner Woodyatt was given under the auspices of Northwestern University Medical School May 20. Dr. Evarts A. Graham, emeritus professor of surgery at Washington University, St. Louis, and a friend and colleague of Dr. Woodyatt, spoke on the latest developments in clinical surgery. Dr. Woodyatt, who died in Chicago in 1953 at the age of 75, was head of the department of medicine at Rush Medical College; president of the Institute of Medicine of Chicago, the American Society for Clinical Investigation, and the Association of American Physicians; and director of the Sprague Memorial Institute Laboratory for Medical Research.

Clinic for Psychiatric Treatment of Children.—A new $60,000 clinic for the psychiatric treatment of emotionally disturbed children, recently opened on the fourth floor of Bobs Roberts Memorial Hospital for Children, will be equipped to handle 100 patients a week when full operation is reached, probably by midsummer. Dr. John F. Kenward, assistant professor of pediatrics and medicine, University of Chicago School of Medicine, is director of the clinic. The clinic is being furnished and equipped with toys and therapy equipment by a $6,150 gift from the Service Club of Chicago. Facilities of the clinic include two children's playrooms built with one-way glass observation screens and intercom systems. Long-range plans involve the treatment and diagnosis of disturbed children and the medical training of pediatric psychiatrists and psychiatric social workers.

INDIANA

Society News.—At the annual meeting of the Hoosier State Medical Society of Muncie June 22, Dr. Ulysses Grant Dailey, Chicago, spoke on recent trends in world medicine and health and disease in Africa. Dr. Thomas C. Moore, Muncie, presented an illustrated lecture, "The Study of Peripheral Venous Physiology and Pathology by Functional Venography." Dr. Matthew Walker, professor of surgery, Meharry Medical College, Nashville, Tenn., read a paper, "Pathological Physiology, Diagnosis and Management of Varicose Veins and Varicose Ulcers."

Robert Masters Award Fund.—The Indiana University School of Medicine has announced establishment of the Robert J. Masters award fund in recognition of Dr. Masters' contributions to medical education during his 30 years as a member of the faculty on whose staff he has served and from which he retired as chairman last year, continuing as professor of ophthalmology. Dr. Masters was presented with a memorial volume containing congratulatory messages from students and associates in all parts of the county. Dr. Fred M. Wilson, who succeeded Dr. Masters as head of the department, announces that the award fund will be used for the benefit of graduate students in the ophthalmology department, as recognition of unusual excellence and achievement. Dr. Masters has served as Chairman of the A. M. A. Section on Ophthalmology.

MARYLAND

Virginia Beyer Lecture.—The department of psychology, Springfield State Hospital, Sykesville, announces that the third annual Springfield Lecture has been renamed the Virginia Beyer Lecture in honor of the late Dr. M. Virginia Beyer, former clinical director of the hospital. The first Virginia Beyer lecturer, Dr. Stuart C. Miller of the Austen Riggs Center, Stockbridge, Mass., had as his topic, June 24-25, "Contemporary Psychoanalytic Ego Psychology."

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

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MASSACHUSETTS

Dr. Berry Honored.—For his achievements as a medical researcher, teacher, and administrator, Dr. George Packer Berry, dean, Harvard Medical School, Boston, was awarded an honorary doctor of science degree by the University of Rochester, N. Y., at the commencement June 12. For 17 years, until he became dean of Harvard Medical School in 1949, Dr. Berry was professor of bacteriology and chairman of the department at the University of Rochester School of Medicine and Dentistry, where he was assistant dean from 1942 to 1947 and associate dean from 1947 to 1949.

Appoint Professor of Surgery.—Dr. James Clark White, chief, neurosurgical service, Massachusetts General Hospital, Boston, has been promoted to professor of surgery of the Harvard Medical School at the Massachusetts General Hospital. During World War II, as a captain and chief of neurosurgery at the U. S. naval hospitals in Chelsea and in St. Albans, N. Y., Dr. White made significant contributions to studies of painful injuries of peripheral nerves and immersion foot. Dr. White has been associated with the Massachusetts General Hospital since 1924 and with the Harvard Medical School since 1926. He is a consultant in neurosurgery at the Boston Veterans Administration Hospital and a member of the National Research Council Subcommittee on Vascular Injuries and Peripheral Nerve Injuries.

MICHIGAN

Sickle Cell Anemia Studies.—Studies of the inheritance factor in sickle cell anemia have been aided by an appropriation of $66,000 granted to the Child Research Center of Michigan by the Rockefeller Foundation. The new grant, together with a first quarter grant for a pilot study of this and allied diseases, will be available for a three year period. The studies will be led by Dr. James Neel of the Institute of Human Biology in the University of Michigan, Ann Arbor, and Dr. Wolfgang W. Zuelzer of the Child Research Center.

Personal.—At its alumni reunion May 14, Wayne University, Detroit, presented an alumni award to Dr. Louis J. Hirschman, founder and former head of the department of proctology at the college of medicine. Dr. Hirschman, who served on the college staff from 1904 to 1947, is associate editor of the *American Journal of Surgery* and past-president of the Michigan State and Wayne County medical societies.——Dr. Joseph T. Noe Jr., who has been medical director of the East Liverpool (Ohio) District Pottery Group since 1948, has been appointed medical director of Wyandotte Chemicals Corporation to fill the vacancy created by the death of Dr. William H. Honor. Dr. Noe will be responsible for the development and administration of the health services for the employees of Wyandotte, in line with the expanding health maintenance program under way.

MISSISSIPPI

State Medical Election.—New officers of the Mississippi State Medical Association include: Dr. S. Lamar Bailey, Kosciusko, president; Dr. Henry C. Ricks, Jackson, president-elect; Drs. William L. Stallworth, Columbus, George H. Martin, Vicksburg, and James G. Blaine, Hazlehurst, vice-presidents; and Dr. George E. Twente, Jackson, secretary (reelected).

Study of Trauma.—Dr. James D. Hardy, professor and chairman of the department of surgery and surgeon-in-chief to the Hospital of the University of Mississippi, Jackson, has been awarded an Army grant of $35,985 for the further investigation of various problems in the field of trauma, including thermal burns, surgical endocrinology, body fluid metabolism, prostheses for arterial replacement, surgical nutrition, and the anesthesia tolerance of depleted subjects.

NEW JERSEY

Society News.—At the meeting of the New Jersey Orthopaedic Society at Jersey City Medical Center, Jersey City, the following physicians participated by invitation: Alvin M. Arkin, Claus W. Jungeblut, Robert Ward, and Walter A. Thompson, New York; Francis L. Boyle, Bayonne; and Alfred J. D'Agostini, Newark.——Newly elected officers of the New Jersey chapter of the American College of Surgeons include: Dr. Philip J. Kunderman, New Brunswick, president; Dr. James H. Spencer, Newton, vice-president; Dr. Benjamin Daversa, Spring Lake, secretary; and Dr. J. Harold MacArt, South Orange, treasurer. ——The Society for the Relief of the Widows and Orphans of Medical Men of New Jersey, a group of 634 New Jersey physicians, held its 74th annual meeting May 18 in Newark. This society, with assets of nearly $100,000, has assisted the widows of its members for many years. The officers for the ensuing year are: president, Dr. Earl LeRoy Wood, Newark; vice-president, Dr. Berthold T. D. Schwarz, Montclair; secretary, Dr. Herbert M. Ill, Glen Ridge; treasurer, Dr. Harold A. Tarbell, Newark; and custodian of the permanent fund, Dr. Herbert A. Schulte, Newark.

Clara Maass Memorial.—The Fannie E. Rippel Foundation recently announced a grant of 1 million dollars to the 85-year-old Clara Maass Memorial Hospital, Newark. The gift will go toward construction of the hospital's proposed new 324-bed building. The hospital grant is the first made by the foundation, which was established in memory of his wife by the late Julius S. Rippel of Newark, the $13,325,000 net assets of whose estate went to the foundation. The Clara Maass Memorial Hospital was formerly known as the Newark German Memorial Hospital, then the Newark Memorial Hospital, and later the Lutheran Memorial. The hospital adopted its present name after 1951, the 50th anniversary of the death of nurse Clara Maass, who was graduated in 1895 from the then Newark German Memorial Hospital and who gave her life Aug. 24, 1901, in the yellow fever experiments in Havana, Cuba. In 1951, the Republic of Cuba issued a 3 million copy commemorative postage stamp honoring her memory and set Aug. 24 as the date for the annual observance of "Clara Maass Day." The nurses of the United States, under the leadership of the American Nurses Association, have requested the Post Office Department to issue a similar stamp in this country honoring Clara Maass as the symbol of the "American Nurse in Peace and in War."

NEW YORK

Thomas Ordway Memorial Laboratory.—Friends and students of the late Dr. Thomas Ordway have contributed $10,000 in memory of the former dean of Albany Medical College. The gifts will cover the purchase of special equipment. Dr. Ordway served as dean of the college from 1915 to 1947.

Personal.—Joseph C. Hinsey, Ph.D., dean of the Cornell University Medical College from 1942 to 1953, associate dean of the Cornell University Graduate School from 1952 to 1953, and presently director of the New York Hospital-Cornell Medical Center, and Arthur Knudson, Ph.D., retiring chairman of the department of biochemistry of the Albany Medical College, were awarded honorary doctor of science degrees at the 125th commencement exercises of the Albany Medical College June 3.

Increase in Mental Patients.—According to Dr. Arthur W. Pense, acting commissioner of mental hygiene, Department of Mental Hygiene, Albany, the number of resident patients in the institutions of the department increased by 3,077 during the fiscal year ending March 31, bringing the total to a new high of 116,513. Dr. Pense attributes the increase primarily to the continued high rate of admissions, which this year numbered 23,858. Last year's total of 23,960 admissions was the highest in the 112 year history of the state hospital system.

Dr. Glueck Goes to Minnesota.—Dr. Bernard C. Glueck Jr., Ossining, director of scientific research at the New York Psychiatric Institute and since 1952 director of the sex delinquency research project at Sing Sing Prison, will leave state service July 31 to become an associate professor in the department of psychiatry at the University of Minnesota Medical School, Minneapolis. Dr. Glueck, who is also attending psychiatrist at Ossining General Hospital and instructor in psychiatry at Columbia University, was formerly supervising psychiatrist at Sing Sing.

Medical Physics Division at Brookhaven.—Dr. James S. Robertson, Upton, has been named head of the newly formed medical physics division at Brookhaven National Laboratory. The group had been a part of the physiology division. Dr. Robertson has been at Brookhaven since 1949 except for two years' service recently completed at the Naval Radiological Defense Laboratory in San Francisco. Other members of the new group are Dr. Victor P. Bond of Yaphank, who joined the Brookhaven staff in December after service with the Radiological Defense Laboratory; Elmer E. Stickley, Ph.D., of Bellport, who conducted research in spectroscopy with the Pittsburgh Plate Glass Company before beginning his research in radiology at Brookhaven in 1951; and Richard I. Weller of East Patchogue, who taught physics at the U. S. Maritime College, Fort Schuyler, before coming to Brookhaven last year. The new group, which studies problems of radiation dosimetry, both biological and physical, is involved in various phases of the program in which the Brookhaven nuclear reactor is used in brain tumor studies.

New York City

Courses in Accident and Fire Prevention.—The Center for Safety Education at New York University has scheduled the following courses in accident and fire prevention:

Sept. 26, Accident Prevention—Its Background, Objectives, and Relationships, (SC-1); Philosophy and Basic Principle of Accident Prevention (SC-2).

Sept. 27, Industrial Hazards—Mechanical and Personal: Control Methods (SC-3); Principles of Safety Inspection (SC-14); Marine Accident Prevention (SC-17).

Sept. 28, Accident Prevention for Operators of Motor Vehicle Fleets: Organizing the Program (SC-9); Vision Improvement in Industrial and Motor Vehicle Operators (SC-11); Hospital Accident Prevention (SC-20).

Sept. 29, Fire Prevention and Protection Inspection (SC-8); Hotel and Guest Safety (SC-19).

Sept. 30, Industrial Safety Technology and Instrumentation (SC-18).

Full information may be secured by writing to the Center for Safety Education, Division of General Education, New York University, New York 3, or by calling SPring 7-2000, Extension 632.

Personal.—Dr. Marsh McCall, director of medicine of the Beekman Down-Town Hospital, will lecture on "Management and Diagnosis of Mitral Stenosis" at the Academy of Postgraduate Medical Education in Karlsruhe (West Germany) on July 21. ——Dr. Leroy D. Vandam has been appointed anesthesiologist-in-chief at Peter Bent Brigham Hospital and associate professor of anesthesia, Harvard Medical School, Boston.——Dr. Tibor de Cholnoky of New York City and Greenwich, Conn., lectured on "Reconstruction of Larger Facial Defects and Mammaplasty" by invitation of the Surgical Society of Vienna at the Surgical Clinic of the University of Vienna May 12.——Dr. Robert A. Cooke, director of the Roosevelt Hospital's Institute of Allergy, was recently honored when his portrait, commissioned by a group of physicians who had been his students, was presented to Roosevelt Hospital. Dr. Cooke founded the first clinic devoted to allergy diseases at New York Hospital 36 years ago; it was moved to the Roosevelt Hospital in 1932. Dr. Cooke also was the founder and first president of what is now known as the American Academy of Allergy.

New Medical Center.—Dr. J. A. W. Hetrick, president of New York Medical College, Flower-Fifth Avenue Hospitals, has announced the formation of a new medical center, to be known as New York Medical College—Metropolitan Medical Center, component units of which will consist of New York Medical College, Flower-Fifth Avenue Hospitals, the new Metropolitan Hospital, old Metropolitan Hospital, and Bird S. Coler Hospital. All levels of medical education will be carried on in this institution through New York Medical College. Residency training programs will be established on the basis of a center residency. The visiting staff appointed to the center will hold appointments at all hospitals. Directors of departments at the college will serve also as directors of departments at the center. The Bird S. Coler Hospital has 2,000 beds, the old Metropolitan 1,000, the new Metropolitan 1,000, and Flower-Fifth Avenue 368 beds and 84 bassinets, making this one of the largest medical centers in New York City. As the first step in a 10 year expansion and development program, New York Medical College is presently conducting a fund-raising campaign to finance a new million dollar building integrated with the main college building on 105th Street and Fifth Avenue.

VIRGINIA

Dr. Cockrell Honored.—Dr. Loren E. Cockrell, Reedville, was guest of honor at a program of tribute and a reception held by the members of Bethany Methodist Church in observance of his 85th birthday and 60 years of practice. Dr. Cockrell was given a silver bowl inscribed "Presented to Loren E. Cockrell, M.D., by his friends in grateful recognition of 60 years' unselfish and devoted service in the field of medicine, and a lifetime of abiding interest in all matters, moral, civic and educational in the communities he has so faithfully served."

GENERAL

Railroad Establishes Industrial Hygiene Unit.—Dr. Norbert J. Roberts, medical director of the Pennsylvania Railroad, announces the establishment of a section of industrial hygiene in the medical department. James F. Morgan, formerly head chemical hygienist of the Industrial Hygiene Foundation of America, Inc., at Mellon Institute, Pittsburgh, will be head of the section.

Borden Award.—The Borden award for 1955, administered by the American Institute of Nutrition, was given to Albert G. Hogan, Ph.D., professor of animal nutrition at the University of Missouri, at the annual dinner of the institute in San Francisco April 13. The award consists of $1,000 and a gold medal carrying the inscription, "for outstanding contributions on the nutritive significance of the components of milk."

Research Conference on Cancer.—The Gordon Research Conference on Cancer will be held from Aug. 29 to Sept. 2 at Colby Junior College, New London, N. H. The main topics for discussion will be (1) Features of the Cancer Cell and the Cancerous State: Carcinogenesis; (2) Hormonal Factors in Origin and Control of Neoplasms; (3) Immunologic Phenomena Related to Neoplastic Growth; and (4) Viruses Causing Leukemia and Tumors. Requests for attendance at the conference or for any additional information should be addressed to W. George Parks, Ph.D., director, at the above address.

Air Pollution Control Guide.—The American Foundrymen's Society, Des Plaines, Ill., has issued a booklet, "Control of Emissions from Metal Melting Operations," compiled by its air pollution control committee, working on an industry-wide project. The brochure, which describes the engineering characteristics of the various types of equipment now in service for controlling emissions from metal-melting operations, includes typical operating data, obtained from installations of several types of equipment. The booklet contains practical illustrations, tables, and an extensive bibliography. It sells for $1.50 to AFS members; $2.25 to nonmembers.

New Magazine on Rehabilitation.—*The World the Handicapped Live In* is the title of a new 30 page picture magazine recently published by the Institute for the Crippled and Disabled, the rehabilitation center at 23rd Street and First Avenue, New York. The new magazine dramatizes pictorially the problems of children and grownups whose disabilities—congenital, accidental, and from disease—require comprehensive rehabilitation if those affected are to survive and prosper in an environment not designed for them. More than 100 pictures are presented in separate sections, so as to point up the specific activities that the handicapped must be able to do in order to live in the world of the able-bodied. Copies of the publication may be obtained without charge from the institute.

Study of Atomic Radiation.—The National Academy of Sciences will undertake a broad appraisal of present knowledge about the effects of atomic radiation on living organisms and will seek to identify questions on which further intensive research is urgently needed, according to a recent announcement by Detlev W. Bronk, Ph.D., president of the academy. The study has been

assured financial support by the Rockefeller Foundation, which has already made an initial grant for planning purposes. The study will collect and evaluate available scientific information bearing on all phases of the biological effects of the increasing use of atomic energy; identify problems that require further research; initiate such investigations; and appraise the state of medical knowledge regarding therapy and protection. The availability of information to scientists, physicians, and the general public will be evaluated.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States, its territories and possessions in the weeks ended as indicated:

Area	June 25, 1955		June 26, 1954, Total
	Paralytic Type	Total Cases Reported	
New England States			
Maine	..	1	..
New Hampshire	..	..	..
Vermont	1	1	1
Massachusetts	3	4	5
Rhode Island	1	1	1
Connecticut	..	..	8
Middle Atlantic States			
New York	10	16	11
New Jersey	..	4	4
Pennsylvania	..	10	6
East North Central States			
Ohio	3	12	6
Indiana	1	4	7
Illinois	3	13	9
Michigan	..	9	23
Wisconsin	1	4	6
West North Central States			
Minnesota	1	6	4
Iowa	..	3	5
Missouri	..	..	3
North Dakota	..	1	1
South Dakota	..	1	2
Nebraska	1	1	10
Kansas	1	8	5
South Atlantic States			
Delaware	..	..	..
Maryland	2	2	..
District of Columbia	1	1	1
Virginia	4	6	1
West Virginia	..	1	2
North Carolina	..	3	8
South Carolina	1	8	9
Georgia	2	4	12
Florida	3	14	51
East South Central States			
Kentucky	1	5	4
Tennessee	1	3	6
Alabama	1	3	11
Mississippi	1	7	32
West South Central States			
Arkansas	..	1	10
Louisiana	10	12	28
Oklahoma	..	3	14
Texas	23	45	99
Mountain States			
Montana	..	2	1
Idaho	5	7	1
Wyoming	..	1	2
Colorado	1	3	5
New Mexico	1	3	..
Arizona	..	1	5
Utah	..	2	2
Nevada	..	3	2
Pacific States			
Washington	1	2	5
Oregon	2	3	7
California	17	33	60
Territories and Possessions			
Alaska	..	..	2
Hawaii	1	1	11
Puerto Rico	2	2	..
Total	106	280	508

Palmer Fellowships Awarded.—The Lowell M. Palmer Senior Fellowships in the Medical Sciences were recently awarded to Dr. Sam L. Clark Jr., Washington University School of Medicine, St. Louis; Dr. David E. Haft, University of Rochester (N. Y.) School of Medicine and Dentistry; Dr. David E. Rogers, Cornell University Medical College, New York; and James M. O'Brien, M.S., Tulane University of Louisiana School of Medicine, New Orleans. The four two-year fellowships, amounting to $52,000, are awarded annually to medical teachers and research scientists of exceptional ability who are in the "middle period" between completion of the usual fellowships and the attainment of professional rank of a permanent nature. Funds for the fellowships were set up in 1952 by Mr. Carleton H. Palmer, former chairman of the board of E. R. Squibb and Sons, in memory of his father, the late Lowell M. Palmer. The fund is administered by Cornell University Medical College, New York.

Society News.—New officers of the **American Academy of Forensic Sciences** include: Mr. Fred E. Inbau, Chicago, president; Dr. Alan R. Moritz, Cleveland, president-elect; and Dr. Walter J. R. Camp, Chicago, secretary-treasurer.——The **Catholic Hospital Association of the United States and Canada** recently elected The Rt. Rev. Msgr. Robert A. Maher, Toledo, Ohio, president; The Rt. Rev. J. B. Brunini, V.G., P.A., Jackson, Miss., president-elect; The Rt. Rev. Msgr. Joseph B. Toomey, Syracuse, N. Y., first vice-president; and The Rev. Anthony B. Peschel, Casselton, N. D., second vice-president. ——The **American Academy of Tuberculosis Physicians** recently elected the following officers: Dr. Harry Shubin, Philadelphia, president; Dr. Rupert C. L. Markoe, Detroit, first vice-president; Dr. Zoltan Galambos, Chicago, second vice-president; and Dr. Oscar S. Levin, Denver, secretary.——The **American Urological Association** recently elected the following officers: Dr. George C. Prather, Brookline, Mass., president; Dr. Charles H. DeT. Shivers, Atlantic City, N. J., president-elect; Dr. Samuel L. Raines, Memphis, Tenn., secretary; Dr. Grayson L. Carroll, St. Louis, treasurer; and Dr. Wirt B. Dakin, Los Angeles, historian. ——Newly elected officers of the **American Gynecological Society** include: Dr. Isidor Clinton Rubin, New York, president; Dr. Lewis Cass Scheffey, Philadelphia, first vice-president; Dr. Willard Richardson Cooke, Galveston, Texas, second vice-president; Dr. John I. Brewer, Chicago, secretary; and Dr. John Parks, Washington, D. C., treasurer. The 1956 annual meeting will be held at the Shoreham, Washington, D. C., May 21-23. ——Newly elected officers of the **American Broncho-Esophagological Association** include Dr. Daniel S. Cunning, New York, president; Dr. Howard W. D. McCart, Toronto, Canada, vice-president; Dr. F. Johnson Putney, Philadelphia, secretary; and Dr. Verling K. Hart, Charlotte, N. C., treasurer. The next annual meeting will be held at the Sheraton Mount Royal Hotel, Montreal, Canada, May 15-16, 1956.

LATIN AMERICA

Cancer Grant in Peru.—For the first time in the history of the Damon Runyon Memorial Fund for Cancer Research, a financial grant was made for research work in a medical institution in Peru. The grant, totaling $4,000, went to the Universidad Nacional Mayor de San Marcos in Lima, to assist Dr. Pablo Mori-Chavez in his research on "The Effect of High Altitude on Neoplastic Growth."

Grant to Public Health Center in Colombia.—The Rockefeller Foundation has made a grant of 1,200,000 Colombian pesos (about $504,000) for a five year period to the department of preventive medicine and public health of the Universidad del Valle in Cali, Colombia. Established five years ago under the direction of Dr. Jorge Vergara-Delgado as a center for the study of local problems and the training of personnel to handle these problems, the university includes faculties of medicine, engineering, social studies, nursing, and liberal arts. The medical school, with the cooperation of government and private agencies, is expanding its curriculum. The department of preventive medicine and public health will direct and coordinate the teaching of the many sciences associated with community health and the practical experience provided within the hospital and rural communities.

FOREIGN

Annual Pediatric Meeting.—The next annual Congress of the Italian Society of Pediatrics will be held in Perugia Oct. 9-11 under the direction of Prof. Pio Ritossa, director of the pediatric clinic of the University of Perugia. The subjects for discussion will be (1) Renal Dwarfism, (2) Obesity in Infancy and Childhood, and (3) Assistance to the Legitimate and Illegitimate Child in Our Legislature and in the World Legislature.

Congress of Stomatology.—The 14th French Congress of Stomatology will be held in Paris Oct. 3-9 under the chairmanship of Dr. Andre Lattes of the Laennec Hospital. Practical courses will be given in the hospitals in the mornings. Films on surgery of the mouth will be shown. The questions discussed will be: Techniques and Indications for the Surgical Treatment of Fractures of the Inferior Maxilla (with No Loss of Material); Pain in Stomatology; Adjoining "Skeletonized" Prosthesis: Its Esthetic, Functional, and Prophylactic Value; and Possibilities and Present Limitations of Various Orthodontic Therapies. Information may be obtained from Dr. Robert Vrasse, 2 rue de Miromesnil, Paris 8.

International Children's Centre.—A course on tropical pathology of the child and its social consequences will be offered from Sept. 19 to Oct. 30 at the International Children's Centre in Paris to physicians from tropical and subtropical countries, as well as from countries responsible for some of these territories, and to medical graduates who propose to work in tropical and subtropical regions. The curriculum of the course comprises (1) the study of general data on the child in a tropical environment and (2) an outline of the major tropical diseases as well as an outline of the special aspects of some world-wide diseases in tropical environment and of the health and social problems involved in the prevention and large-scale treatment of these diseases. Instruction will include lectures, study circles, practical demonstrations in scientific institutions, laboratory and hospital services, and visits to centers engaged in the study and production of new drugs used in the treatment and prophylaxis of tropical diseases. Information may be obtained from the Public Relations Service, International Children's Centre, Chateau de Longchamp, Bois de Boulogne, Paris 16ème. Information will also be supplied on a course to be given from Nov. 7 to Dec. 18 on medicosocial problems of childhood for welfare and administrative personnel.

CORRECTION

Actinomycin-C.—A correspondent from Farbenfabriken Bayer writes from Leverkusen, Germany, in reference to the Query and Minor Note in THE JOURNAL, Jan. 29, 1955, p. 486, that "Actinomycin-C was not isolated by Dr. Waksman but by Dr. Hackmann here in our research laboratories. Waksman isolated Actinomycin A, but this is not identical with Actinomycin-C."

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

1957 Annual Meeting, New York, June 3-7.

AMERICAN MEDICAL ASSOCIATION PUBLIC RELATIONS INSTITUTE, Drake Hotel, Chicago, Aug. 31- Sept. 1. Mr. Leo E. Brown, 535 N. Dearborn St., Chicago 10, Director.

AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS, The Homestead, Hot Springs, Va., Sept. 8-10. Dr. Frank R. Lock, Bowman Gray School of Medicine, Winston-Salem, N. C., Secretary.

AMERICAN CONGRESS OF PHYSICIAL MEDICINE AND REHABILITATION, Hotel Statler, Detroit, Aug. 28-Sept. 2. Dr. Frances Baker, 30 North Michigan Ave., Chicago 2, Secretary.

AMERICAN PHYSIOLOGICAL SOCIETY FALL MEETING, Tufts College, Medford, Mass., Sept. 6-9. Dr. Allan C. Burton, Univ. of Western Ontario, London, Ont., Canada, Secretary.

AMERICAN VETERINARY MEDICAL ASSOCIATION, Radisson Hotel and Auditorium, Minneapolis, Aug. 15-18. Dr. J. G. Hardenbergh, 600 South Michigan Blvd., Chicago 5, Executive Secretary.

BIOLOGICAL PHOTOGRAPHIC ASSOCIATION, Wisconsin Hotel, Milwaukee, Aug. 30-Sept. 2. Miss Jane H. Waters, c/o Pavelle Color, Inc., 533 W. 57th St., New York 19, Executive Secretary.

NATIONAL MEDICAL ASSOCIATION, Los Angeles, Aug. 8-11. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

NEVADA STATE MEDICAL ASSOCIATION, Riverside Hotel, Reno, Aug. 18-20. Dr. William A. O'Brien III, 505 Chestnut St., Reno, Secretary.

NEW ENGLAND HEALTH INSTITUTE, Colby College, Waterville, Me., Aug. 30-Sept. 1. Dr. Edward W. Colby, City of Portland Health Dept., Portland, Me., Chairman.

PACIFIC DERMATOLOGIC ASSOCIATION, Mexico, D. F., Mexico, Aug. 22-24. Dr. Ben A. Newman, 436 N. Roxbury Drive, Beverly Hills, Calif., Secretary.

POST GRADUATE MEDICAL ASSEMBLY OF SOUTH TEXAS, The Shamrock, Houston, July 18-20. Dr. C. Forrest Jorns, 412 Jesse H. Jones Library Bldg., Houston, Secretary.

REGIONAL MEETINGS, AMERICAN COLLEGE OF PHYSICIANS: Jamestown, N. D., Sept. 10. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

RENO SURGICAL SOCIETY, Reno, Nev., Aug. 18-20. Dr. James R. Herz, 509 Humboldt St., Reno, Nev., Secretary.

ROCKY MOUNTAIN RADIOLOGICAL SOCIETY, Shirley-Savoy Hotel, Denver, Aug. 18-20. Dr. John H. Freed, 4200 East 9th St., Denver 20, Secretary.

SOCIETY OF GENERAL PHYSIOLOGISTS, Marine Biological Laboratory, Woods Hole, Mass., Sept. 9-10. Dr. A. M. Shanes, National Institutes of Health, Bethesda 14, Md.

UTAH STATE MEDICAL ASSOCIATION, Union Bldg., Salt Lake City, Sept. 8-10. Mr. H. Bowman, 42 S. Fifth East St., Salt Lake City 2, Executive Secretary.

WEST VIRGINIA STATE MEDICAL ASSOCIATION, White Sulphur Springs, Aug. 18-20. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

FOREIGN AND INTERNATIONAL

AUSTRALASIAN MEDICAL CONGRESS, Sydney, N.S.W., Australia, Aug. 20-27. For information write: Federal Council of the B.M.A. in Australia, 135 Macquaire St., Syndey, N.S.W., Australia.

CANADIAN SOCIETY FOR THE STUDY OF FERTILITY, Royal York Hotel, Toronto, Ont., Canada, Oct. 6-8. Dr. Earl R. Plunkett, 469 Waterloo St., London, Ont., Canada, Secretary.

CONGRESS OF INTERNATIONAL ASSOCIATION OF APPLIED PSYCHOLOGY, London, England, July 18-23. Dr. C. B. Frisby, National Institute of Industrial Psychology, 14 Welbeck St., London, W.1, England, President.

CONGRESS OF INTERNATIONAL ASSOCIATION OF LIMNOLOGY, Helsinki, Finland, July 26-Aug. 7, 1956. For information address: Dr. H. Luther, Snellmansgatan 16 C 36, Helsinki, Finland.

CONGRESS OF INTERNATIONAL ASSOCIATION OF PSYCHOTECHNOLOGY, London, England, July 18-23. For information write: Dr. C. B. Frisby, Director, National Institute of Industrial Psychology, 14 Welbeck St., London, W.1, England.

CONGRESS OF INTERNATIONAL SOCIETY OF SURGERY, Copenhagen, Denmark, July 23-29. Dr. L. Dejardin, 141 rue Belliard, Brussels, Belgium, General Secretary.

INTERNATIONAL ACADEMY OF LEGAL AND SOCIAL MEDICINE, Plenary Conference, Genes, Italy, Oct. 13-17. Prof. Domenico Macaggi, Institut de Medicine legale, Universite de Genes, Genes, Italy, President.

INTERNATIONAL ANATOMICAL CONGRESS, Paris, France, July 25-30. Prof. Gaston Cordier, 45, rue des Saints-Pères, Paris 6e, France, Secretary General.

INTERNATIONAL CONFERENCE OF MEDICAL LIBRARIANS AND REFERENCE LIBRARIANS, University Hall, Brussels, Belgium, Sept. 10. For information address: Miss Ch. de Looze, Librarian c/o Oeuvre Nationale Belge de Defense contra la Tuberculose, 56, rue de la Concorde, Brussels, Belgium.

INTERNATIONAL CONGRESS OF ALLERGOLOGY, Rio de Janeiro, Brazil, S. A., Nov. 6-13. Dr. Bernard N. Halpern, 197 boulevard St. Germain, Paris 7e, France, Secretary General.

INTERNATIONAL CONGRESS OF ANGIOLOGY AND HISTOPATHOLOGY, Fribourg, Switzerland, Sept. 2-5. For information write: Dr. Gerson, 4 rue Pasquier, Paris 8e, France.

INTERNATIONAL CONGRESS OF BIOCHEMISTRY, Brussels, Belgium, Aug. 1-6. Prof. C. Liebecq, 17 Place Delcour, Liège, Belgium, Secretary General.

INTERNATIONAL CONGRESS OF CRIMINOLOGY, London, England, Sept. 11-18. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

INTERNATIONAL CONGRESS OF EUROPEAN SOCIETY OF HAEMATOLOGY, Freiburg i,Br., Germany, Sept. 20-24. Prof. Dr. L. Heilmeyer, Hugstetter Strasse 55, Freiburg i,Br., Germany, Chairman.

INTERNATIONAL CONGRESS OF INTERNATIONAL COLLEGE OF SURGEONS, Buenos Aires, Argentina, S. A., Nov. 19-24, 1956. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

INTERNATIONAL CONGRESS OF INTERNATIONAL SOCIETY OF BRONCHOESOPHAGOLOGY, Buenos Aires, Argentina, S. A., Oct. 28-29. Dr. Juan Carlos Arauz, Cangallo 4015, Buenos Aires, Argentina, S. A., Secretary General.

INTERNATIONAL CONGRESS OF LIBRARIANSHIP AND DOCUMENTATION, Brussels, Belgium, Sept. 11-18. For information write: Dr. A. C. Breycha-Vauthier, Librarian, United Nations, Geneva, Switzerland.

INTERNATIONAL CONGRESS OF MEDICAL PROFESSIONAL JURISDICTION, MEDICAL ETHICS, AND COMPARATIVE MEDICAL LAW, Paris, France, Sept. 30-Oct. 3. Dr. J. R. DeBray, Conseil National de L'Ordre des Medécins, 60, Boulevard Latour-Maubourg, Paris 7e, France, Secretary General.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, International Committee of Military Medicine and Pharmacy, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

INTERNATIONAL CONGRESS OF NEO-HIPPOCRATIC MEDICINE, Montecatini, Terme, Italy, May 20-22, 1956. Prof. P. Delore, 13 rue Jarente, Lyon, France, Secretary-General.

INTERNATIONAL CONGRESS OF NEUROPATHOLOGY, London, England, Sept. 12-17. Dr. W. H. McMenemey, Maida Vale Hospital for Nervous Diseases, London, W.9, England, Secretary.

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INTERNATIONAL CONGRESS OF PAEDIATRICS, Copenhagen, Denmark, July 22-27, 1956. Professor P. Plum, Rigshospitalet, Copenhagen, Denmark, President.

INTERNATIONAL CONGRESS OF PHYSICAL MEDICINE, Copenhagen, Denmark, August 20-24, 1956. Dr. B. Strandberg, Kobenhavns amts sygehus i Gentofte, Dept. of Rheumatology and Physical Medicine, Hellerup, Denmark, Honorable Secretary.

INTERNATIONAL CONGRESS OF PLASTIC SURGERY, Stockholm, Sweden, Aug. 1-4, and Uppsala, Sweden, Aug. 5. Dr. Tord Skoog, Uppsala, Sweden, General Secretary.

INTERNATIONAL CONGRESS OF RADIOLOGY, Mexico, D. F., Mexico, July 22-28, 1956. Dr. Jose Noriega, Tepic 126 (2e piso), Mexico, D. F. 7, Mexico, Secretary General.

INTERNATIONAL CONGRESS ON URINARY LITHIASIS, Evian, France, Sept. 2-4. Mr. Rossollin-Grandville, Direction Cachet, Evian (Hte-Savoie), France, Secretary General.

INTERNATIONAL CONGRESS OF WORLD CONFEDERATION FOR PHYSICAL THERAPY, New York, New York, U. S. A., June 17-23, 1956. For information address: Miss Mildred Elson, American Physical Therapy Association, 1790 Broadway, New York 19, New York, U. S. A.

INTERNATIONAL GENERAL MEDICAL CONGRESS, University of Rosario Medical College, Rosario, Argentina, S. A., Nov. 7-12. Dean Jose Imhoff, Santa Fé 3100, Rosario, Argentina, S. A., Chairman.

INTERNATIONAL MEDICAL CONGRESS, Verona, Italy, Sept. 1-4. For information write: c/o Offices of the International Verona Fair, Piazza Bra., Verona, Italy.

INTERNATIONAL OFFICE OF DOCUMENTATION OF MILITARY MEDICINE, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

INTERNATIONAL PHYSIOLOGICAL CONGRESS, Brussels, Belgium, July 29-Aug. 5, 1956. For information address: Prof. J. Reuse, Faculte de Medicine et de Pharmacie, 115 Boulevard de Waterloo, Brussels, Belgium.

INTERNATIONAL SOCIETY FOR THE STUDY OF BIOLOGICAL RHYTHMS, Stockholm, Sweden, Sept. 15-17. For information write: Prof. Ture Petrén, Karolinska Institutet, Stockholm 60, Sweden.

INTERNATIONAL VITAMIN E CONGRESS, Cini Foundation, Island of San Giorgio Maggiore, Venice, Italy, Sept. 5-8. Prof. Emilio Raverdino, via Pietro Verri 4, Milano, Italy, Secretary.

NEURORADIOLOGIC SYMPOSIUM, London, England, Sept. 13-17. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

PAN AMERICAN CONGRESS OF INTERNATIONAL COLLEGE OF SURGEONS, Mendoza City, Argentina, S. A., Oct. 22-26. For information address: Secretary, Caseros Av. 2154, Buenos Aires, Argentina, S. A.

PAN AMERICAN CONGRESS OF OPHTHALMOLOGY, Santiago, Chile, S. A., Jan. 9-14, 1956. Dr. Rene Contardo, Huerfanos 930, Of. 74, Santiago, Chile, Secretary General.

PAN AMERICAN CONGRESS ON RHEUMATIC DISEASES, Rio de Janeiro and Sao Paulo, Brazil, S. A., Aug. 14-20. For information write: Dr. Waldemar Bianchi, 126 Avenida Franklin D. Roosevelt, Rio de Janeiro, Brazil, S. A.

PAN AMERICAN MEDICAL SOCIAL CONVENTION, Bogota, Colombia, S. A., Oct. 15-22. Dr. Leopoldo E. Araujo, Avenida de los Presidentes Num. 506, Apartado 2589, La Habana, Cuba, Secretary.

VENEZUELAN CONGRESS OF MEDICAL SCIENCES, Caracas, Venezuela, S. A., Nov. 18-26. Dr. A. L. Briceno Rossi, Apartado 4412, Ofic. del Este, Caracas, Venezuela, S. A., Secretary General.

WORLD CONGRESS OF ANESTHESIOLOGISTS, Scheveningen, Netherlands, Sept. 5-10. For information write: Mr. W. A. Fentener van Vlissingen, Noord-Houdringelaan, 24, Bilthoven, Netherlands.

WORLD CONGRESS ON FERTILITY AND STERILITY, Naples, Italy, May 18-26, 1956. For information address: Prof. G. Tesauro, S. Andrea della Dame, 19, Naples, Italy.

WORLD CONGRESS OF JEWISH PHYSICIANS, Haifa, Tel-Aviv, Jerusalem, Israel, Aug. 10-17. Dr. Z. Avigdori, P.O.B. 1342, Jerusalem, Israel, Chairman.

WORLD FEDERATION FOR MENTAL HEALTH, Istanbul, Turkey, Aug. 21. For information write: Miss E. M. Thornton, 19 Manchester St., London, W.1, England.

WORLD MEDICAL ASSOCIATION, Vienna, Austria, Sept. 20-26. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

CALIFORNIA: *Written.* Los Angeles, Aug. 22-25; and Sacramento, Oct. 17-20. *Oral and Clinical Examinations for Foreign Medical School Graduates.* Los Angeles, Aug. 21; and San Francisco, Nov. 13. *Oral Examination for Reciprocity Applications.* Los Angeles, Aug. 20; and San Francisco, Nov. 12. Sec., Dr. Louis E. Jones, Room 536, 1020 N St., Sacramento.

DELAWARE: *Endorsement.* Dover, July 21. Final date for filing applications was June 15. Sec., Dr. Joseph S. McDaniel, Dover.

MONTANA: *Examination and Reciprocity.* Helena, Oct. 4-5. Sec., Dr. Sidney A. Cooney, 7 West 6th Ave., Helena.

NEW HAMPSHIRE: *Examination and Reciprocity.* Concord, Sept. 14. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NEW MEXICO:* *Examination and Reciprocity.* Santa Fe, Nov. 21-22. Sec., Dr. R. C. Derbyshire, 227 E. Palace Ave., Santa Fe.

NORTH CAROLINA: *Reciprocity.* Blowing Rock, July 29. Sec., Dr. Joseph J. Combs, 716 Professional Building, Raleigh.

OHIO: *Endorsement.* Columbus, Aug. 29-30 and Oct. 3-4. Sec., Dr. H. M. Platter, Wyandotte Bldg., Columbus 15.

SOUTH DAKOTA:* *Examination and Reciprocity.* Rapid City, July 19-20. Exec. Sec., Mr. John C. Foster, 300 First National Bank Bldg., Sioux Falls.

ALASKA:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Sec., Dr. John E. Kennedy, Agana.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

COLORADO: *Examination.* Denver, Sept. 14-15. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

MICHIGAN: *Examination and Endorsement.* Detroit and Ann Arbor, Oct. 14-15. Sec., Mrs. Anne Baker, 410 W. Michigan Ave., Lansing 15.

NEW MEXICO: *Examination.* Santa Fe, July 17. Sec., Mrs. Marguerite Cantrell, Box 1522, Santa Fe.

OKLAHOMA: *Examination.* Oklahoma City, August 26-27. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Sept. 10 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

TEXAS: *Examination.* Various cities to be determined by number of applicants from the various areas, October. Sec., Brother Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

WISCONSIN: *Examination.* Madison, Sept. 23; Milwaukee, Dec. 3. Sec., Mr. William H. Barger, 621 Ransom St., Ripon.

ALASKA: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

*Basic Science Certificate required.

MAGAZINE–TELEVISION REPORT

The following list of current medical articles in mass-circulation magazines and forthcoming network television programs on medical subjects is published each week only for the information of readers of THE JOURNAL. *Unless specifically stated, the American Medical Association neither approves nor disapproves of the articles and programs reported.*

TELEVISION

Monday, July 18

NBC-TV, 9 p. m. EDT. "Medic" on its summer rerun schedule presents "Break Through the Bars."

MAGAZINES

Pageant, August, 1955

"The Miracle of Meticorten," by Lawrence Galton

"One of the most exciting medical developments in years is a new drug, Meticorten." The article describes its use for arthritis and rheumatic diseases and reports its value, in varying degree, for spondylitis, acute gout, osteoarthritis, asthma, pulmonary emphysema, rheumatic fever, severe bursitis, skin diseases, and nephrotic syndrome.

"Hunt for a Killer"

A story of the research going on in an effort to prevent deaths from cancer. It reports on the use of surgery and radiation and warns: "No known drug cures any kind of cancer in human beings. There are certain drugs, palliatives, that slow it down or even stop it altogether, but only for a time."

Good Housekeeping, August, 1955

"How to Keep Cool in Summer Heat," by Maxine Davis

The author explains the physiological basis for the body's reaction to hot weather and lists these as methods recommended by scientists for hot weather health: keep water in your personal cooling system; replace salt; take advantage of air conditioning whenever possible; follow a normal diet, but eat less; get enough sleep; dress intelligently; sun-tan carefully.

DEATHS

Lloyd, Bolivar Jones ✦ Assistant Surgeon General, U. S. Public Health Service, retired, and formerly medical director, Washington, D. C.; born in Bryan, Texas, May 10, 1872; University of Texas School of Medicine, Galveston, 1897; entered the U. S. Public Health Service as assistant surgeon in 1900; retired Jan. 1, 1938; director and president of the special sanitary commission, Guayaquil, Ecuador, 1908-1909, when he became special sanitary representative of Panama and Peru and director of health, Republic of Ecuador; physician to president of Ecuador from 1907 to 1910; sanitary advisor-inspector of the 13th Naval District from 1917 to 1919; chief of division of sanitary reports and statistics from 1922 to 1926; at one time associated with Pan American Sanitary Bureau; U. S. delegate to First Pan American Conference of Directors of Health in Washington, D. C., in 1926, Eighth Pan American Sanitary Conference, Lima, Peru, in 1927, and Ninth Pan American Sanitary Conference in Buenos Aires, Argentina, in 1934; died May 28, aged 83, of arteriosclerotic heart disease.

Littlejohn, David ✦ Dearborn, Mich.; born in Glasgow, Scotland, Sept. 24, 1876; Central Medical College of St. Joseph, Mo., 1897; also a graduate in law; specialist certified by the American Board of Public Health; member and once on the governing council of the American Public Health Association; past-president of the Michigan Public Health Association; served during World War I; director of Wayne County Health Department from 1944 to 1954; at one time health officer for St. Joseph; two years later selected to organize a health department at Ishpeming; formerly director of the West Virginia State Department of Health, Midland County Health Department in Midland, and health officer of Chippewa County in Sault Ste. Marie; in 1930 received a doctorate in public health at the University of Georgia in Athens; died in the Harper Hospital, Detroit, May 25, aged 79, of rupture of the aorta due to arteriosclerosis.

Allen, Harvey Stuart ✦ Chicago; Northwestern University Medical School, Chicago, 1933; specialist certified by the American Board of Surgery; professor of surgery at his alma mater; as a Fulbright professor, lectured and taught in Denmark, Sweden, Finland, Norway, and London; served in the campaigns in Italy and North Africa during World War II and was awarded the Bronze Star; on the staff of the Cook County Hospital and the Passavant Hospital; died May 30, aged 48, of acute coronary thrombosis.

Beardsley, Frank Allen ✦ Frankfort, Ind.; the Hahnemann Medical College and Hospital, Chicago, 1914; served during World War I; president of the Clinton County Tuberculosis Association; on the staff of the Clinton County Hospital, where he died May 9, aged 62, of coronary disease.

Blakeslee, Emily ✦ Sandusky, Ohio; Cleveland University of Medicine and Surgery, 1897; served on the staffs of the Good Samaritan and Providence hospitals; died in Cleveland April 26, aged 84, of heart disease and carcinoma of the lung, metastatic from the breast.

Breckenridge, Harry E. ✦ Green Bay, Wis.; Baltimore University School of Medicine, 1892; died May 13, aged 86, of arteriosclerosis and chronic myocarditis.

Burroughs, Arthur Porter, Los Angeles; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; on the staff of the Methodist Hospital; died May 30, aged 89, of cardiovascular renal disease.

Butler, Emmett Ethridge Jr. ✦ Gainesville, Ga.; Meharry Medical College, Nashville, Tenn., 1934; an associate member of the American Medical Association; member of the board of education; on the staff of the Hall County Hospital; died May 5, aged 47, of carcinoma of the stomach.

✦ Indicates Member of the American Medical Association.

Carney, Francis Thomas ✦ Johnstown, Pa.; Jefferson Medical College of Philadelphia, 1924; interned at the Windber (Pa.) Hospital; member of the American Urological Association; fellow of the International College of Surgeons and the American College of Surgeons; past-president of the Cambria County Medical Society; served during World War I; on the staffs of the Conemaugh Valley Memorial Hospital, Lee Hospital, and the Mercy Hospital, where he died May 20, aged 56, of subarachnoid hemorrhage.

Carson, John S., Arnold, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1903; died in the Veterans Administration Hospital in Bath, N. Y., Feb. 17, aged 78, of bronchogenic carcinoma.

Chesrow, Albert John ✦ Chicago; Loyola University School of Medicine, Chicago, 1919; for many years on the staff of the Mother Cabrini Memorial Hospital; in 1952 knighted by the Italian government for his charity work; died June 12, aged 59, of coronary heart disease.

Clifton, Harry Coltman ✦ Bloomfield, Conn.; University of Pennsylvania Department of Medicine, Philadelphia, 1901; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; formerly associated with the Hartford (Conn.) Hospital and St. Francis Hospital in Hartford, Bristol (Conn.) Hospital, New Britain (Conn.) General Hospital, and Manchester (Conn.) Memorial Hospital; died May 24, aged 75, of carcinoma of the neck.

Delaney, William Aloysius ✦ Mitchell, S. D.; John A. Creighton Medical College, Omaha, 1910; fellow of the International College of Surgeons and the American College of Surgeons; served overseas during World War I; on the staff of St. Joseph's Hospital; died in St. Luke's Hospital, Chicago, March 8, aged 70, of myocardial infarction.

Dicus, George Allen ✦ Streator, Ill.; Rush Medical College, Chicago, 1890; for 55 years secretary of the North Central Illinois Medical Society; past-president of the LaSalle County Medical Society; on the staff of St. Mary's Hospital; president of the Streator Federal Building & Loan Association; died in Taos, N. Mex., June 9, aged 91, of hypertensive cardiovascular disease and arteriosclerosis.

Dockry, Patrick Francis ✦ Green Bay, Wis.; Marquette University School of Medicine, Milwaukee, 1933; was associated with the Bellin Memorial and St. Mary's hospitals and St. Vincent's Hospital, where he died May 10, aged 49, of diverticulosis of the colon.

Ellis, Robley Ned ✦ San Jose, Calif.; University of California Medical School, San Francisco, 1938; specialist certified by the American Board of Psychiatry and Neurology; served during World War II; for many years associated with the Agnews State Hospital in Agnew and the Santa Clara County Hospital; died in Almaden May 5, aged 46.

Fuller, Judd Dow ✦ Lomira, Wis.; Milwaukee Medical College, 1910; died April 12, aged 70, of myocardial infarction.

Hambrecht, Fred Emerson ✦ Galesburg, Ill.; State University of Iowa College of Medicine, Iowa City, 1929; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; on the staffs of the Galesburg Cottage and St. Mary's hospitals; died in Monmouth June 1, aged 50, of injuries received in an automobile accident.

Jennings, Adolphus Young, Mabank, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1932; past-president of the Kaufman County Medical Society; served as a member of the board of trustees of the public schools of Mabank; local surgeon for the Texas and New Orleans Railroad; died in the Kaufman (Texas) Clinic and Hospital Feb. 24, aged 48, of coronary occlusion.

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Koehler, Robert, New York City; Medizinische Fakultät der Universität, Vienna, Austria, 1908; member of the Medical Society of the State of New York; served as a gynecologist in the outpatient department at Beth Israel Hospital; resident gynecologist at the Brooklyn Hebrew Home and Hospital for the Aged; died May 24, aged 70, of a heart attack.

Kriekard, Peter John ✦ Grand Rapids, Mich.; Detroit College of Medicine, 1897; for many years member of the board of directors of the Holland Home; member of the board of trustees of the Hope College in Holland; died May 23, aged 79, of carcinoma.

Lang, Leonard William ✦ Detroit; University of Michigan Medical School, Ann Arbor, 1929; on the staff of the Mount Carmel Mercy Hospital; died May 12, aged 52, of coronary thrombosis.

Lawson, Ben Hill ✦ Winter Garden, Fla.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1911; member of the American Public Health Association; an associate member of the American Medical Association; died March 28, aged 72, of a heart attack.

Lewis, Frederick Arthur ✦ Auburn, N. Y.; Bellevue Hospital Medical College, New York City, 1891; an associate member of the American Medical Association; veteran of the Spanish-American War; on the staff of the Mercy Hospital and the Auburn Memorial Hospital, where he died May 14, aged 90, of coronary thrombosis.

Lipetz, Basile ✦ Albany, N. Y.; Université de Paris Faculté de Médecine, France, 1924; associate professor of psychiatry at the Albany Medical College; member of the American Psychiatric Association; on the staff of the Albany Hospital; died May 26, aged 71, of a heart attack.

McCuiston, Allen Masten ✦ Mount Olive, N. C.; North Carolina Medical College, Charlotte, 1911; served as vice-president of the Wayne County Medical Society; formerly medical director of the Caswell Training School at Kinston; died May 31, aged 68, of cerebral thrombosis, hypertension, and myocardial infarction.

McLarney, John Thomas, Brookfield, Mo.; Washington University School of Medicine, St. Louis, 1914; died March 3, aged 65, of uremia.

Mohrman, Silas Sylvester ✦ Tulsa, Okla.; St. Louis College of Physicians and Surgeons, 1907; served during World War I; died May 22, aged 77, of hemorrhage due to carcinoma of the stomach.

Mootnick, Morris William, Mount Vernon, N. Y.; Long Island College Hospital, Brooklyn, 1905; member of the Medical Society of the State of New York; until his retirement was associated with the Mount Sinai Hospital and the New York Eye and Ear Hospital in New York City; died Feb. 18, aged 83.

Morris, Richard Dick, Allen, Okla.; University of Arkansas School of Medicine, Little Rock, 1912; died in the Valley View Hospital, Ada, May 16, aged 69, of heart disease.

Mulholland, Edward James, Chevy Chase, Md.; John A. Creighton Medical College, Omaha, 1920; senior assistant surgeon, U. S. Public Health Service Reserve, in the Department of Labor, Bureau of Employees Compensation; died in the U. S. Public Health Service Hospital, Baltimore, May 23, aged 61, of abdominal cancer.

Munson, Frederick Ten Eycke ✦ Greensboro, N. C.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1914; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; for many years on the staff of the Alexander Blain Hospital in Detroit; died in Greensboro, N. C., May 16, aged 72, of coronary thrombosis.

Newman, Leo Isaac, Brooklyn; Columbia University College of Physicians and Surgeons, New York City, 1924; on the staff of Crown Heights Hospital; died in the Beth-El Hospital March 27, aged 55, of coronary thrombosis.

Roth, Henry Herman ✦ Murphysboro, Ill.; Illinois Medical College, Chicago, 1901; served eight years on the Murphysboro Township High School Board of Education, including one year as president; also served on the grade school board of Murphysboro; on the staff of St. Andrew's Hospital, where he died May 19, aged 80, of cerebral hemorrhage, diabetes mellitus, and nephritis.

Scamell, Joseph William, Concord, Calif.; Cooper Medical College, San Francisco, 1898; died in Walnut Creek May 27, aged 80, of arteriosclerotic heart disease and Paget's disease.

Sherman, Hubert Townsend ✦ Cambridge, Minn.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1904; while in Plainview served as president of the Wabasha County Medical Society; on the staff of Cambridge State School and Hospital; died March 23, aged 75, of coronary occlusion.

Stephens, Frederick Newton ✦ Miami Shores, Fla.; University of Toronto Faculty of Medicine, Toronto, Canada, 1904; member of the New England Otolaryngological Society; at one time practiced in Somerville and Winchester, Mass.; died May 25, aged 77, of coronary heart disease.

Stevenson, Chaplain McCabe, Lexington, Ky.; Meharry Medical College, Nashville, Tenn., 1923; died Feb. 14, aged 64, of acute myocarditis.

Strikol, Albert John, Hollywood, Fla.; Temple University School of Medicine, Philadelphia, 1919; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; formerly on the staff of the Wilmington General, St. Francis, and Delaware hospitals in Wilmington, Del.; died May 6, aged 62, of coronary occlusion.

Sullivan, John B., Sweet Grass, Mont.; St. Louis College of Physicians and Surgeons, 1903; formerly associated with the U. S. Public Health Service and the Indian Service; served as director of the First National Bank at Shelby; died May 17, aged 76.

Thorpe, Lewis Sanborn, Covina, Calif.; Medical Department of the University of California, San Francisco, 1896; died June 4, aged 84, of a heart attack.

Trueblood, R. Carlton, Big Spring, Texas; University Medical College of Kansas City, Mo., 1909; died April 11, aged 79, of cerebral infarction.

Van Sandt, Guy Barton, Wewoka, Okla.; Barnes Medical College, St. Louis, 1903; served during World War I; for many years owner of the Wewoka Hospital; charter member and past-president of the Rotary Club; died May 3, aged 76, of hypertension and a cerebral accident.

Williamson, Mark Angle ✦ Encinitas, Calif.; Cooper Medical College, San Francisco, 1902; an associate member of the American Medical Association; served during World War I; died May 19, aged 76, of abdominal cancer.

Wilson, Harry Augustus ✦ Lansing, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1913; died May 29, aged 69, of coronary thrombosis and diabetes mellitus.

Winn, John Paul ✦ Murphysboro, Ill.; University of Illinois College of Medicine, Chicago, 1935; interned at the Grant Hospital in Chicago; formerly a resident at the Winnebago County Hospital in Rockford; served overseas during World War II; died in the Burnham City Hospital, Champaign, May 21, aged 52, of burns received in a motel explosion in Tolono.

Wissman, Harry Carl ✦ Detroit; Detroit College of Medicine and Surgery, 1929; on the staffs of the Providence and William Booth Memorial hospitals; died May 28, aged 53.

Zeckel, Adolf ✦ New York City; Rijks-Universiteit te Groningen Medische Faculteit, The Netherlands, 1928; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association, New York Psychosomatic Society, and the New York Psychoanalytic Society; associate in psychiatry at the Vanderbilt Clinic of Columbia-Presbyterian Medical Center; died in the Roosevelt Hospital March 17, aged 50, of a heart attack.

FOREIGN LETTERS

AUSTRIA

Amniotic Fluid Embolism.—At a meeting of the Austrian Society of Gynecologists and Obstetricians in Vienna on Jan. 11, Dr. I. Martin reported on a 43-year-old multipara, whose death from an amniotic fluid embolism occurred during delivery. Autopsy revealed an open foramen ovale. So far 43 cases of this type had been published in world literature. The pathogenesis of the condition had not yet been elucidated.

Intestinal Tumors Misdiagnosed.—At the same meeting Dr. H. Knaus reported on a 58-year-old woman who had had one child and who in 1928 underwent supravaginal extirpation of the uterus for a uterine myoma. In November, 1954, she complained of constipation, and on Dec. 12 she was admitted to a hospital for irradiation treatment with a diagnosis of inoperable neoplasm of the ovary with metastasis in the pouch of Douglas. Internal and roentgenologic preliminary examinations revealed only a colitis and an insufficiency of the ileocecal valve. After consultative examination by the speaker, a diagnosis of an ovarian tumor, the size of a fist and located on the right side above the pelvic inlet, was made. On Dec. 28 a laparotomy was performed and a malignant cecal tumor was found, which had infiltrated into an adjacent loop of the small intestine where a tumor the size of a small chicken egg had developed. After resection of the cecum and the involved loop of the small intestine, an end-to-side anastomosis between the ascending colon and the ileum and a side-to-side anastomosis of the interrupted small intestine was performed. After primary closure of the abdominal wall and the administration of penicillin and streptomycin, the patient had a surprisingly uneventful convalescence. She was placed on a bland diet and had the first bowel movement on the sixth postoperative day; 14 days after the operation she was on a normal diet and completely free of complaints. This experience shows that, despite careful preliminary examination, such an erroneous diagnosis is possible.

Icterus Neonatorum and Blood Groups in Mother and Child.—At the same meeting Dr. H. Czermak presented a series of 500 pairs of mother and child in which the child had icterus neonatorum. The classic blood groups, the subgroups, and the Rh factor were determined and the occurrence and the intensity of the icterus neonatorum were recorded. The speaker concluded that the degree of intensity of the physiological icterus neonatorum does not depend on the presence of a heterospecific pregnancy in the ABO or Rh system. There was no difference in primiparas and multiparas nor in boys and girls, while a significantly increased incidence of icterus neonatorum was observed among the premature infants as compared to those born at term. This shows the importance of the degree of maturation of the organs, particularly of the liver. Icterus praecox presents in most cases a mild form of icterus neonatorum. The demonstration of an increased isoagglutinin titer of the mother, as well as the occurrence of incomplete isoantibodies in the maternal serum, show the difficulties of serologic differentiation of genuine icterus neonatorum. The differential diagnosis, therefore, must be frequently made from clinical observations.

Essential Hypertension.—At the same meeting Dr. R. Chwalla reported that in 33% of 494 autopsies performed on patients in whom a diagnosis of essential hypertension was made he found disorders the correction of which might have cured the hypertension. These included adenoma of the prostate in 25%, clinically silent unilateral or bilateral changes of the kidneys in 5.67%, diffuse hyperplasia of the prostate in 2%, and primary rigidity of the neck of the bladder in 1.4%. Only in the last few years has it become known that renal cysts, asymptomatic and clinically benign hypernephromas, and renal adenomas may cause hypertension. Since according to experience removal of these obstructions of the flow of urine may cause disappearance of hypertension in about one-third of the cases, one may assume that surgical removal of the kidney disorders mentioned may restore the blood pressure to normal. In 31.3% of the patients with essential hypertension, examination revealed a macroscopic increase of the substance of the adrenals (mostly of the cortex and more rarely of the medulla) and in about one-third of these patients the hypertension disappeared after an operative reduction of the adrenal tissue.

Tonsillogenic Sepsis.—At the meeting of the Society of Physicians in Vienna on Feb. 4, Dr. R. Koschier reported on a 53-year-old woman who became ill on Nov. 15, 1954, with a high fever and a severe sore throat. Her sore throat subsided as the result of treatment with sulfonamides. On Nov. 28 she was admitted to the hospital with a diagnosis of myocarditis. Examination revealed hepatomegaly and splenomegaly. The electrocardiogram showed myocardial changes. The patient still continued to have septic temperatures despite the administration of large doses of antibiotics. After a tonsillectomy her temperature promptly returned to normal and her other symptoms disappeared.

Myocardial Infarction.—At the same meeting Dr. R. Tolk reported on 342 patients with myocardial infarction in whom the diagnosis had been confirmed either by electrocardiographic studies or autopsy. In more than 80% of the patients a highly probable diagnosis of myocardial infarction based on the history alone had been made. Comparison of the patients' histories with the localization of the infarcts revealed definite predominance of a typical history in the cases of infarction of the anterior wall as compared to those with infarction of the posterior wall. This finding was reversed in patients with atypical histories.

CHILE

Fulmonary Hydatidosis.—The surgical treatment, complications, and immediate mortality of pulmonary hydatidosis were reported in the *Boletín del Hospital-Sanatorio "El Peral"* for tuberculosis and bronchopulmonary disease. A total of 86 patients were operated on between January, 1941, and March, 1952. Of these 75% were males. Most patients were between the ages of 10 and 40. In 27% the cysts were in the lower lobe of the right lung and in 29% in the lower lobe of the left lung, but in women the localization was evenly distributed between the upper and lower lobes. In the first years marsupialization and the Posada technique were used, but as time went by these techniques were replaced by more radical methods. Thus in the beginning cysts measuring more than 10 cm. in diameter were marsupialized; those less than 5 cm. in diameter were treated by the Posada technique; and in those between 5 and 10 cm. in diameter the two methods were performed with equal frequency. The presence of superimposed infection did not influence the choice. On the other hand cystectomy was used more frequently in patients with closed than in those with open lesions, and resection was more often performed in patients with open than in those with closed lesions.

Such postoperative complications as effusions, hemorrhage, and empyema occurred in 33.7% of the patients. Complications occurred in 53.5% of those who underwent Posada's operation, 38% of those who had a cystectomy, 30% of those who had a resection, and 17% of those who had a marsupialization. The total operative mortality rate, including death occurring up to 30 days after operation, was 5.8%, but in patients who underwent resection it was 25%; in those who had a marsupialization it was 4%; and in the others there were no operative deaths. For cysts up to 5 cm. in diameter sequelae occurred in 7.1%; for those between 5 and 10 cm. sequelae occurred in 19.4%;

The items in these letters are contributed by regular correspondents in the various foreign countries.

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and in those over 10 cm. in diameter sequelae occurred in 69.7%. Sequelae occurred oftener in patients with open than in those with closed cysts and oftener after marsupialization than after the Posada operation. This can be explained by the fact that cysts over 10 cm. were usually marsupialized. Sequelae were observed in 38.5% of all the patients operated on. The sequelae most frequently noted were a residual cavity with or without symptoms and bronchiectasis. The sequelae were asymptomatic in 46% of the patients; in 23% the symptoms were mild and of short duration; and in only 30% were they serious enough to warrant another operation. The intensity of symptoms was independent of the size of the cyst.

Piezocardiography.—In the December number of the *Revista médica de Chile* Silva and his co-workers stressed the necessity of obtaining an objective appreciation of the hemodynamic value of a systolic murmur, especially in patients with mitral stenosis in whom commissurotomy is being proposed. They enumerated several techniques that allow the study of left auricular dynamics, such as the study of pulmonary capillary pressure and puncture of the left bronchi. The technique used by them was described by Lasser in 1951. They use a 60 cm. no. 8 catheter, such as is used in cardiac catheterization. One extremity of the catheter is adapted to a thin rubber balloon and the other has an adaptor that permits its connection to a recording device. Under fluoroscopy the catheter is introduced to the level of the left atrium and the balloon is filled with a radiopaque substance such as a 15% solution of sodium iodide. Changes in pressure of the atrium are thus transmitted to the balloon and then on to the recording device. Of the 58 subjects studied, 18 were normal, 10 had a pure or predominant mitral stenosis, 14 had a pure or predominant mitral regurgitation, 13 had systolic murmurs due to hypertensive cardiovascular disease, and 3 had systolic murmurs of other origin. The criteria used by the authors for the diagnosis of mitral regurgitation was the presence of a grade 3 systolic murmur at the apex with radiation to the axilla, increase of the second pulmonic sound, and an increase of the left ventricle seen roentgenographically.

The normal piezocardiogram is made of two main waves called *a* and *v* due to their likeness to the phlebogram. The *a* wave is produced by the atrial systole and the *v* wave is due to the auricular filling, its apex coinciding with the opening of the mitral valve. These waves are registered 0.04 and 0.06 second later than their electrocardiographic equivalents. Both waves have the same height. Between them there is a depression due to the ventricular systole. In normal persons the height of the *v* wave is always after the end of the T wave of the electrocardiogram. Simultaneous tracings of the phlebogram and the esophageal piezocardiogram show a close similarity in timing between both waves. In mitral stenosis both *a* and *v* waves are obtained, but there is a great predominance of the *v* over the *a* waves. This is because in mitral stenosis the filling capacity of the atrium is greatly increased. The other characteristic is the anticipation of the *v* wave in relation to the electric ventricular systole, produced by the fact that there is a greater pressure in the left atrium. The systolic space between the two waves is depressed. In mitral regurgitation the depression that existed in normal subjects and patients with mitral stenosis is occupied by a positive wave generally plateau-like in configuration that almost completely absorbs the *a* and *v* waves. One patient before commissurotomy had a piezocardiogram typical of mitral stenosis. During the operation no regurgitation was noted by the surgeon. Two months after the operation an intense systolic murmur developed, and the piezocardiogram showed the characteristic plateau-like wave between the *a* and *v* waves.

Medical Treatment of Hypertension.—At the November meeting of the Chilean Medical Society Dr. M. Plaza de los Reyes and his co-workers reported a series of 30 hypertensive patients (18 women and 12 men), most of whom were between 40 and 49 years of age. The patients were given 250 mg. of hexamethonium bromide every eight hours, increasing the dose to 250 mg. every six hours. When this amount was reached, 25 mg. of hydralazine every six hours was added, and the dosage of both drugs was increased every three to four days. The average doses used were 2 to 3 gm. of hexamethonium and 200 to 600 mg. of hydralazine daily. Good results were obtained with these levels of drugs in most patients. The maximum length of control was 14 months. A salt-poor diet was also used. A clinical check-up that included electrocardiograms, roentgenograms of the chest, renal functional studies, and examination of the eyegrounds was made in all patients. The classification of the material according to the Keith, Wagner, and Barker criteria was as follows: type 1, 8 patients; type 2, 15; type 3, 4; and type 4, 3. The hypertension was classified as essential in 15 patients; as due to chronic pyelonephritis in 10; as due to chronic glomerulonephritis in 3; as due to diabetic renal lesions in one; and as due to polycystic kidney in one. In only 10 patients was the treatment given on an outpatient basis. In patients with grade 1 hypertension the results were good in 6 cases and fair in 2; in those with grade 2 hypertension the results were good in 12, fair in 2, and poor in 1; in those with grade 3 hypertension the results were good in 2, fair in 1, and poor in 1; and in those with grade 4 hypertension the results were good in 2 and fair in 1. No definite conclusion could be drawn regarding the result of the treatment in relation to the length of time that the patient had had his hypertension. Renal ischemia was present in most of the patients, but it did not influence the result of the treatment. The most frequent side-effects were constipation, headache, nausea, and orthostatic hypotension. In one patient rheumatoid arthritis developed in the course of treatment.

CUBA

Salmonella Meningitis.—In the *Archivos de Medicina Infantil* for March, 1955, Dr. E. Diaz Orero and his co-workers reported what they believe to be the first case of meningitis due to Salmonella sp. (type Bredeney) seen in Cuba. This organism is found chiefly in fowls. The patient was in good health until the age of 2 months, when she began to have diarrhea. After about two weeks she was admitted to the hospital, at which time her temperature was 104 F. A tentative diagnosis of intestinal sepsis was made and she was given chloramphenicol. Two days later, as she was still febrile, the dosage was increased and the temperature began to come down. On the third day after the increased dosage she was afebrile and no longer irritable. Four days later she was discharged as cured, but one week later she was readmitted with a temperature of 104 F and marked nervous irritability. Kernig's and Brudzinki's signs were negative. There was no increased tension in the fontanelles and the patient had no convulsions. Her spleen was slightly enlarged. A lumbar puncture was performed and a milky fluid under slightly increased pressure was obtained.

She was given chloramphenicol, streptomycin, and sulfadiazine intravenously. Because she could not swallow well, plasma and a blood transfusion of 80 cc. were given. Four days later she had improved greatly and was able to swallow, when the laboratory reported Salmonella sp. (type Bredeney) in the spinal fluid culture. Treatment with chloramphenicol and streptomycin was continued for 10 more days; then the treatment with streptomycin was discontinued. The dosage of chloramphenicol was reduced and after two more weeks it too was discontinued. The patient appeared to be well during the next two weeks then suddenly became febrile again with a temperature of 104 F, restlessness, irritability, and general convulsions. A lumbar puncture revealed a turbid spinal fluid. Acromycin was given intravenously, in doses of 100 mg. every 12 hours, and 200 mg. of chloramphenicol was given intramuscularly every 6 hours. Protein hydrolysates were given subcutaneously. After a stormy course the patient recovered completely.

Pulmonary Biopsy.—In the *Boletin del Hospital Militar* (no. 2) Dr. Antonino Perez reports a new method of biopsy of the lung in which a bronchial catheter with a radiopaque tip; a rigid guiding mandrel; a flexible mandrel for the principal catheter; a second catheter, specially devised for approaching the superior bronchi and having an original system for incurvation; a sample-catching or seizing accessory of new design, with a special guiding attachment; a second sample-catching element, for application only on blocked lesions or tumors without free bronchial communication; and an aspirator are used. For reaching lesions

located in segments of the upper lobe, a new system has been devised by means of which the point of the sample-catching element may be curved at will. The method is easy and uses fluoroscopic control rather than endoscopy. The main indication for the procedure is the examination of a deep lying pathological zone that cannot be reached with the bronchoscope and cannot be reached through the chest wall without risks.

Vectorcardiography.—In *Archivos del Hospital Universitario* for May, 1955, Dr. Jose M. Calviño and his co-workers stated that vectorcardiography is a useful method of recording electric phenomena produced within the heart and of clarifying certain electrocardiographic signs that are otherwise difficult to interpret. Some investigators have found it more useful than routine electrocardiography; others have found it less useful; and some considered that the results are similar. Spatial vectorcardiography is said to have the advantage that it registers intracardiac events as they really are, that is, as tridimensional phenomena. Discrepancies between vectorcardiographic and conventional electrocardiographic tracings are sometimes encountered, although much less in normal than in abnormal subjects.

ENGLAND

Poliomyelitis Vaccine.—The Minister of Health announced that the health departments and the Medical Research Council have been in close touch with the development in the United States of the Salk vaccine. Home production should be well along by late autumn. Tests are being made to determine whether the vaccine is effective against the strains of poliomyelitis virus found in Britain. It is not yet certain whether it is fully effective in children aged 4 or under, and it may be found to be less effective against type 1 of the virus, the commonest type in Britain, than against others. Production of the vaccine is in the hands of two firms, and the government will buy their whole output. Trials will be carried out under the direction of the Medical Research Council at London, Southend, Manchester, Sheffield, Belfast, and Glasgow. Pilot batches of the vaccine are already available. Small supplies will also be furnished to Commonwealth countries. The government of India has been asked to remove the ban on the export of monkeys to Britain, and representatives of the Medical Research Council have been sent to Africa in the hope of obtaining additional supplies from there. Tests with the vaccine will start in May. Arrangements are being made for them by the local departments of bacteriology of the universities and health authorities in the towns where the trials are to be done. Consent will be obtained from the parents of the children to be vaccinated. A Medical Research Council committee is coordinating the work at the various centers, where two batches of vaccine will be tested, each on 100 to 200 children between the ages of 1 and 12 years. The size of the trials is too small to allow a useful appraisal of the clinical protection afforded by the vaccines. The object at this stage is to study the antibody response to the three inoculations the children will receive. It is, therefore, important that those in the trial should have little or no natural immunity to poliomyelitis. To check this, antibody titers will be determined before any child is accepted for the trials. If little or no immunity is found, three injections of vaccine will be given, the second and third at intervals of a week and a month after the first. The antibodies will be determined again after the second and third inoculations. The speed and scope of the trials are likely to be governed by the availability of nonimmune children and the supply of vaccine.

Asymptomatic Hypertension.—At the Ciba Foundation's fourth Quarterly Clinical Forum in April, Dr. Paul Wood of the London Heart Hospital pointed out that hypertension by itself produces no symptoms; symptoms only appear when neurological, retinal, cardiac, or renal complications occur. The problem facing the Forum was the assessment of prognosis and the need for the treatment of patients found to have a raised blood pressure level on routine examination. Professor Pickering of St. Mary's Hospital, London, stressed that blood pressure rose progressively with age and therefore no dividing line could be drawn between normal and pathological levels. The prognosis of patients with asymptomatic hypertension taken as a group is undoubtedly poorer than that of the population at large, as has been demonstrated by actuarial figures. The prognosis deteriorates progressively as the blood pressure level rises. This is only a generalization based on the group, but there is great individual variation within the group. The prognosis for a given level of blood pressure is better in the older than in the younger person. Dr. Preston, a life insurance physician, said that there was no known way of forecasting how the process would develop in any patient. Actuaries accepted as good risks older persons with blood pressure levels that, if they occurred in younger persons, would result in the loading of an insurance premium or even rejection.

Since the symptoms of the complications of hypertension depend, with the possible exception of heart failure, on degenerative changes in the vessels, it was suggested by one speaker that emphasis should be shifted from the level of the blood pressure to the behavior of the vessel walls under the stress of hypertension. Prof. K. J. Franklin advocated a further study of arteriolar smooth muscle and of the peripheral nervous system in relation to hypertension. If the reason could be found why some vessels could withstand a raised intravascular pressure, it might provide a clew to the liability of complications in persons with a raised blood pressure level. A decision whether or not to treat hypertensive patients with active vasodepressor drugs might be extremely difficult. Not only may such treatment have to be continued indefinitely, but the side-effects of such drugs constitute a great drawback. Prof. J. McMichael of the Post Graduate Medical School, London, and Prof. M. L. Rosenheim of University College Hospital, London, considered that patients with asymptomatic hypertension should not be treated, as there is no evidence that treatment improves the prognosis. Dr. Paul Wood, however, urged treatment if the electrocardiogram indicated myocardial involvement. The forum was not prepared to lay down any rules for the selection of patients for treatment, as each case must be judged on its merits. Professor Pickering said that a carefully controlled trial with the vasodepressor drugs was necessary but it would be difficult to conduct, because observations would have to extend over many years. One speaker considered that insurance physicians often, although unwittingly, created anxiety states in patients who were told for the first time that they had an elevated blood pressure level.

New Antibiotic.—The discovery of a new antibiotic has been announced by Dr. A. T. Fuller (*Nature* **175:722**, 1955). It was obtained from a spore-bearing organism of the Bacillus pumilus type isolated from soil collected in East Africa. Good yields are obtained from a medium containing inorganic salts, ammonium citrate, glucose, and meat extracts, both in shallow layer and in aerated deep cultures. The antibiotic has been obtained as a white crystalline solid, and it contains nitrogen and sulfur. It does not give a ninhydrin reaction, even on hydrolysis, and is therefore unusual in being a nonpeptide antibiotic from a bacterial source. In nutrient broth it inhibits Micrococcus pyogenes var. aureus at a dilution of 1 in 20 million, hemolytic streptococci group A at 1 in 18 million, and Mycobacterium tuberculosis at 1 in 200,000. The substance is virtually nontoxic. Mice survived the repeated subcutaneous injection of 0.5 gm. daily. It is effective against hemolytic streptococcic infection in mice.

Dormant Cancer.—Prof. H. R. Dean, chairman of the Council of the Imperial Cancer Research Fund, said at the annual meeting held at the Royal College of Surgeons that a neoplasm may arise in the human body and may remain so small that it may cause neither symptoms nor inconvenience and remain dormant throughout the greater part of the patient's life. He described the work of Dr. L. M. Franks, of the fund's scientific staff, who performed autopsies on 220 men over 50 years of age dying from various causes. Careful search of the organs showed histological evidence of cancer of the prostate in 36%. The local and general effects associated with the presence of malignant tumors were absent in these subjects during life. Few cancers were found in men under 50. In the 6th and 7th decades a tumor was found in about a third of all cases; in the 8th decade a tumor was discovered in nearly half; and in the 10th decade one was found in all cases.

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Research on Burns.—At the meeting of the Basingstoke Plastic Center Medical Society in April Dr. Patrick Clarkson of Guy's Hospital, London, said that there had been no dramatic improvement in mortality from severe burns since the middle 1940's, when there were three important developments: the introduction of antibiotics, more radical surgery in the removal of sloughs and in grafting, and appreciation of the colloid and electrolytic changes in the severely burned patient. New therapeutic developments based on a fuller knowledge of the enzyme chemistry and electrolytic and colloid exchanges in the body in the early stages after burning, on a better understanding of the metabolic and endocrine factors, and on improving grafting techniques are needed. Prof. R. H. Thompson of the department of chemical pathology, Guy's Hospital, discussed the part played by enzymes in some of the local and general effects in burns. There may be abnormal local cell metabolism because of the inactivation of enzymes by heat, and active enzymes might be released into the general circulation from damaged cells. Redness and blistering may result from selective enzyme inhibition by a chemical factor. This can be seen in the action of lewisite, which inhibits cell oxidation systems and which can be reversed by dimercaprol. The thermal sensitivities of skin enzymes vary greatly and in a burned area conditions are present that may cause selective enzyme inhibition. The part played by enzyme systems released from burnt tissue is not certain. Proteinase liberated outside the cell may possibly produce vasodilatation and loosening of the epidermis. With Dr. I. Magnus, Professor Thompson had found that the level of cholinesterase in the skin was lower in patients with heat urticaria than in normal persons, which suggested that this enzyme might play a part in the formation of wheals. Cholinesterase is sensitive to heat and, if it were destroyed in burned skin acetylcholine, might accumulate and contribute to the formation of blisters.

Dr. W. Butterfield of the Medical Research Council's Clinical Research Unit, Guy's Hospital, said that after resuscitation he gives the patient a rich diet to prevent or minimize the loss of weight that occurs after burning. The diet contains much carbohydrate, liberal protein, and ample fat. The caloric intake is 50 to 60 calories per kilogram of body weight per day. About 10% of patients with burns have glycosuria without acetonuria, a high fasting blood sugar level, and an elevated glucose tolerance curve. This begins in the first week, may last for weeks or even months, and is aggravated by surgical operations. This diabetic state does not occur in control patients on the same diet, who gain weight. In the burned patient it seems that carbohydrate cannot be used as a protein-sparer. The aggravation of the condition by stress (operations), the absence of acetonuria, and the negative nitrogen balance suggest an adrenocortical activity as the basis for the diabetes, a possibility supported by the high urinary corticoid excretion and eosinopenia found in this disease. In its earlier phase this diabetic state shows insulin resistance. Dr. Butterfield believes that the adrenocortical response disturbs carbohydrate metabolism at the pyruvate level through interference with the metabolism of sulfhydryl groups. Dimercaprol, a sulfhydryl donor, temporarily corrects this disturbance at the pyruvate level.

Dr. P. Gorer of the department of pathology, Guy's Hospital, said that the skin graft was destroyed by an antigen-antibody reaction. The antibody response can be damped down by irradiation or by cortisone, but this is undesirable. Improved results might be obtained if skins could be typed. Volunteers will have to be used if progress is to continue. Women below menopausal age cannot be used owing to possible danger to the fetus, and even in men there is some risk of difficulty in matching for blood transfusion later. Dr. J. P. Bull of the burns unit, Birmingham Accident Hospital, stated that the calculated total plasma loss was 1 ml. for each 1% of body surface burned per kilogram of body weight. This estimate is based on animal experiments and is not necessarily true in man, particularly if treatment is instituted. Sodium and water are retained by the kidney, the retention being greatest in the more extensive burns, despite replacement of colloid and fluid. Administration of sodium and water leads to further retention and pulmonary edema may result. Potassium excretion is increased in the early stages of burning, and unless the potassium is replaced there is danger of hypokalemia after a few days. There is some histological evidence of damage to kidney tubules in severe burns, but total anuria is rare. This retention syndrome may be due to changed circulatory dynamics.

Mr. A. Evans of the Basingstoke Burns Center has obtained good results using the open method of treating burns. Infection, particularly with Pseudomonas aeruginosa, was less common than with the use of pressure dressings, and excision of the slough on or about the 14th day left a good surface for immediate skin cover. Primary excision is the ideal but has limited applications because of the difficulty of assessing the depth of many burns. In extensive burns sloughs are removed early. This formidable operation has been shortened by the use of the Humby knife or electric dermatome to remove adherent sloughs. It is now possible to complete the operation in 45 minutes with skilled assistants and adequate preparation. Homografts are used in extensive burns as a lifesaving measure. Grafts are generally obtained from relatives or the skin bank and positioned alternately with autografts. In burns of the hand the exposure method has given satisfactory results, and active movements can be commenced on the third or fourth day.

Treatment of Mental Illness.—At a public hearing in London on April 27 the British Medical Association placed before the Royal Commission on the Law Relating to Mental Illness and Mental Deficiency a proposal that all patients initially admitted to mental institutions, other than voluntarily, should be as temporary patients without commitment. The association submitted that these admissions should be on the recommendation of two physicians, one of whom should have had experience in psychiatry, and that the patient should have the right to an interview with a magistrate within four weeks of admission. The temporary period should be for six months, extendable to two years. Judicial orders should be used only for those under care as temporary patients and still needing further treatment. One of the British Medical Association representatives told members of the Royal Commission that there were many more mentally ill patients living at home than under care in mental hospitals. Only a small minority enter a hospital, most of them being treated by general practitioners. A proposal was also put forward for dealing with the psychopath. There should be a form of petition by relatives or friends to a court, accompanied by two medical recommendations, and the court should be able to order a specialist examination and admission to a special hospital of psychopaths causing mental suffering to their relatives.

Medical Supplies in Burma.—At a ceremony in London the Chargé d'Affaires at the Burmese Embassy was presented with a model of the group of buildings being erected near Rangoon for the Burmese pharmaceutical industry. They will house a plant to provide Burma with all the serums and vaccines required at present, many pharmaceutical products, and a quarter of a ton of dry medicinal yeast and 2,400 gallons of alcohol a day. The buildings, which are to cost 7 million dollars, occupy a site of 140 acres outside Rangoon and will employ 1,000 people. Owing to the scarcity of skilled labor, prefabricated construction has been used wherever possible and factory-made components of all kinds have been shipped to the site from Britain. The project should be completed by the fall of 1956. An agreement has been signed between the government of Burma and Evans Medical Supplies, Liverpool, whereby this firm has contracted to advise the government on the establishment of a pharmaceutical industry, to staff the factories until Burmese staff is ready to take over, and to manage them for an initial period of seven years.

Death from Intrathecal Injection.—A 43-year-old man was admitted to the Maida Vale Hospital for Nervous Diseases in 1951 for myelographic radiological investigation for unexplained attacks of sciatica. He was given in error an intrathecal injection of the mercurial diuretic, mersalyl, instead of a lipid iodine compound. At that time intrathecal injections were given in the wards, but subsequently they were given in the operating room. The patient was unconscious for five days after the injection and remained completely paralyzed for some time. He stayed in the hospital until March, 1954, when he was discharged with a

paraplegia and was able to get about only with the aid of two canes. Defecation was not well controlled; there was always residual and infected urine. In October, 1954, the patient was admitted for a left nephrectomy for stones, and efforts to preserve the other kidney were successful for about six months. He was admitted again in March, 1955, but rapidly went downhill and died in acute uremia. At the inquest a pathologist testified that death was due to urinary infection following the paraplegia caused by the intrathecal injection of mersalyl given nearly three and a half years before. A verdict of accidental death was returned.

Human Infection with Pleuropneumonia-Like Organisms.—Although pleuropneumonia-like organisms are well-known animal pathogens, there has hitherto been no convincing evidence that strains isolated from man can cause disease in human beings. The lack of an animal susceptible to human strains makes proof of pathogenicity by Koch's postulates impossible. Dr. Joan Stokes, of University College Hospital, London, has described four cases of human infection with pleuropneumonia-like organisms: two of puerperal sepsis, one pyosalpinx, and one postoperative empyema (*Lancet* **1**:276, 1955). All four patients showed the clinical findings of infection, and culture of appropriate specimens under conditions suitable for the growth of aerobic and anaerobic pyogenic bacteria yielded a heavy growth of pleuropneumonia-like organisms. No other cause for the symptoms could be found. In three of the patients recovery followed treatment with chlortetracycline, to which the strains were sensitive, when other treatment had failed. Also, in three of the patients the specific antibody developed during the infection, reached a maximal titer at about three weeks during convalescence, and then fell. No antibody was found in serums from control patients, with or without infections. The evidence that the pleuropneumonia-like organisms isolated from these patients were responsible for the clinical symptoms is highly suggestive.

PERU

Causes of Delay in Diagnosis of Cancer.—A study of 1,000 unselected patients from the outpatient department of the National Institute of Neoplastic Diseases, carried out with the object of elucidating the causes of delay in the diagnosis of cancer, was reported by Dr. E. Cáceres Graziani, director of the institute, and his co-workers at the last meeting of the Inter-American College of Surgeons. The patient is considered to be at fault if the time between the onset of the first symptom or the discovery of the first sign and the first medical consultation is longer than three months or if he consulted a physician within this time but refused to follow appropriate advice. The responsibility of the physician starts as soon as the patient seeks medical advice. A month is considered ample time for a physician to make a diagnosis, advise properly, or refer the patient to a hospital for special study if his condition did not improve, but the time between the first and last medical consultations might be prolonged by the patient beyond a month. Therefore this period of time is not an absolute criterion for evaluating the physician's responsibility. On the other hand, it is possible for the patient to see two or more physicians and still report to the final consultation within a month. The patient and the physician are both considered to be at fault if a combination of the above factors is present. The physician is not at fault if the patient is referred without a diagnosis but within a month. The important factor is that the physician should recognize the seriousness of the disease and refer the patient either to a cancer hospital or a specialist.

In this series the patient alone was responsible for the delay in 48.8% of cases; both patient and physician were responsible in 12.1%; the physician alone was responsible in 13.6%; and there was no delay in 25.5%. Ignorance was by far the most important cause of delay on the part of the patient, other causes being fear, economic reasons, poor advice from the family or friends, and lack of ability to face the facts. Inability to make a diagnosis within a month was the main cause of delay on the part of the physician, others being wrong treatment due to either mistaken interpretation of the symptoms or an incomplete examination of the patient, wrong advice to the patient, lack of both advice and treatment, and adequate treatment but delay in referring a patient who failed to improve to a specialist or cancer clinic. Among patients with cancer of the skin, the diagnosis was delayed in 93.9%. Among those with cancer of the lips, esophagus, bladder, and vulva, diagnosis was delayed in 100%. Late diagnosis in gastric cancer is the fault of the physician in 54.5%.

Pulmonary Hydatidosis.—At the third Inter-American meeting of the American College of Surgeons, Drs. Peschiera (chief of the department of thoracic surgery, Hospital Obrero de Lima), Molina, and Valencia reported a series of 258 patients with pulmonary hydatid cyst treated by resection. The death rate in this series was 2.1%, the lowest reported in the literature; postoperative complications occurred in only 12.8%. Hydatid cyst of the lung is a hazardous disease requiring radical treatment. There is no place today for the so-called conservative treatment, and the aim of the surgeon should be to eradicate in one operation the parasitic portion of the cyst and the surrounding damaged tissue. In order to eliminate all possibilities of bleeding and suppuration, both parts of the cyst must be removed. Any less radical procedure should be regarded as inadequate. In patients with infected cysts, any type of drainage will be comparable to the evacuation of a chronic pulmonary abscess. Preoperative preparation with a high-protein high-vitamin diet and antibiotic therapy supplemented with blood or plasma transfusions is essential in patients with complicated, ruptured, or infected cysts. Uncomplicated cysts require little preoperative preparation. All pulmonary cysts should be approached through a wide thoracotomy with or without rib resection. In this series, the long posterolateral intercostal incision was found to be the most adequate. As a preliminary step in resection and because a large proportion of cysts are superficially located, needle aspiration of the parasitic fluid and extirpation of the germinal layer should be performed in most patients after instillation of 2% formalin solution into the cavity. The choice of the type of resection can be made only at the time of operation, as it depends on the location, size, number, and status of the cyst.

Amebiasis.—Dr. Bustamante y Rivero of Arequipa found amebiasis in about 70% of the inhabitants of the city. Children are the main victims. The high incidence is probably due to the fact that the fresh vegetables consumed locally were, when growing, irrigated with contaminated water. Since 1953 Dr. Bustamante y Rivero has used the new amebicide, Camoform, with excellent results. He has reported (*Rev. Hosp. niño* **16**:59, 1954) a series of 85 adults with acute amebiasis who were given 16.25 mg. (0.25 grain) of Camoform three times a day for five days. Ill-effects (mild gastritis or transient headache) were seen in only a few patients. After 24 hours of treatment clinical improvement was observed in most of the patients and by the third or fourth day they were clinically well. Stools became negative for amebas or cysts between the 6th and 15th day in 82 of the patients, but even in the remaining 3 marked clinical relief was obtained.

Another series of 145 chronic carriers, who had failed to respond to other amebicides and who were poorly nourished and neurasthenic, were also treated with this drug in the same manner. In this group, although the results were not so dramatic, gradual clinical improvement was noted in all, and after a varying amount of treatment negative stools were obtained in 112. In the remaining 33 patients, reinfection could have occurred because the patients took no special precautions. After a second course lasting only three or four days negative stools were obtained in 29 of this group. Follow-up of the first 112 patients showed no evidence of relapse after more than eight months. Many of the 145 patients in this series had hepatic abscesses, and these were also clinically cured by Camoform. No other drug was given to the patients in either of these series. Rest and a high-carbohydrate high-protein diet were the sole adjuvant measures. The author believes that Camoform gives better results than any other form of treatment now in use.

Tuberculosis in Students.—In February the Peruvian Society of Phthisiology held a symposium on tuberculosis in students. From 1950 to 1954, 231,098 school children from several parts of Lima were tested with tuberculin and studied radiologically by the tuberculosis division of the Ministry of Public Health and Social Welfare. In the same period 61,910 of the children examined were given BCG vaccine. This study will continue for several years. It includes children in private as well as public schools. Since the study was started, the morbidity rate for tuberculosis in school children has dropped from 3 to 1.7%. The society has recommended that (1) tuberculin testing and radiographic examination of all school children be obligatory and be performed every year, (2) this work be carried out by the national institutions in charge of the antituberculosis campaign and under the control of phthisiologists, and (3) the number vaccinated with BCG vaccine be progressively increased, especially among those groups showing the highest incidence of the disease.

Gift to National Institute of Neoplastic Diseases.—The Jewish society, Bikur Joilin, for the assistance of the needy ill has presented an electroencephalograph to the National Institute of Neoplastic Diseases. The gift was delivered in a special session in January. Dr. E. Cáceres Graziani, director of the institute, said that the apparatus will be used, among other things, for studies on comatose patients. Electroencephalograms will also be made directly from the cerebral cortex of patients undergoing operation for the removal of brain tumors.

SWITZERLAND

Sixth Year of the World Health Organization.—The annual report of the director-general of the World Health Organization for 1954 (Official Records of the World Health Organization, no. 59, March, 1955) reveals that in 1954 this organization participated in 329 major health projects in 75 countries. The essential aim remained the strengthening of the permanent structure of public health services in the member states, rather than short-term campaigns. The fact that countries markedly increased their requests for World Health Organization help in working out long-term plans for the development of their health services is considered by Dr. Candau, the director-general, as the most encouraging aspect of the requests received. Another important development is the increasing readiness of the member states to undertake joint action in solving problems that affect more than one country. Such joint undertakings include the Inter-American Center of Biostatistics in Chile, the Regional College of Nursing in Egypt, and the advanced course for waterworks engineers in Europe. One of the most outstanding examples of the World Health Organization's role in coordinating national efforts was the program of eradication of malaria from the Americas. Treponemal and venereal infections were the object of mass field programs assisted by the World Health Organization in 20 countries. By the end of 1954, more than 25 million people had been examined and 6 million treated with penicillin in the campaigns in Haiti, Indonesia, Laos, the Philippines, Thailand, and Yugoslavia. The average cost of treatment fell below previous estimates to about $1.25 per patient treated, and $0.12 per person examined. In tuberculosis control, the World Health Organization worked in 28 countries, either with mass BCG vaccination (22 projects) or with tuberculosis teaching and training centers (18) or both. About 32 million people were tested with tuberculin, and about 11 million of them received BCG vaccination. The international expenditure for the BCG campaigns had been borne by United Nations International Childrens Emergency Fund, and the Children's Fund had also assisted materially in many of the antimalarial and treponemal campaigns mentioned above.

In the fight against zoonosis the World Health Organization was particularly concerned with brucellosis, rabies, Q fever, leptospirosis, animal tuberculosis, anthrax, and psittacosis. Work on virus diseases was broadened with the aim of bringing virological techniques into practical use. The World Health Organization influenza laboratories continued their studies. A program for the study of poliomyelitis has been developed. Concerning trachoma the pilot project in the French Zone of Morocco was successful in preventing the annual epidemic of seasonal conjunctivitis. The Formosa project was extended and new schemes started in Egypt, Tunisia, and Yugoslavia. Surveys were made in India, Indonesia, and Spain. Further work concerned 30 other diseases.

To strengthen national health services, the World Health Organization helps to introduce essential measures and techniques into the permanent organization of the country. These depend on the level of development of the country and of its health organization. Concerning the work carried out in the six regions of the World Health Organization the program is different for each region. In Africa, for instance, what has been done so far represents only a small fraction of what remains to be accomplished. In the Americas, there has been steady progress in the development of public health services. This progress, however, must be assessed in relation to the expanding needs of a population that is increasing rapidly especially in the tropical areas. The specific health problems have not changed: gastrointestinal infections and parasitic infestations are still widely prevalent and emphasize the need for better sanitation. The need for well-trained, adequately paid, and fully employed health personnel remains acute. Twenty countries were assisted by the Pan American Sanitary Bureau with 58 different health schemes; 17 of them were cooperative programs of interest to several countries in the region. Governments in the Americas are allocating more funds than before to health work. Normal governmental expenditure for routine health services is now approaching 10% of the national budgets. The region of South-East Asia was able to assist 66 health programs. Since 85% of the population live in rural areas and have a low standard of living, the essential need is to provide basic health services in such areas. Because the European region is more uniform than the other World Health Organization regions, more than half of the 62 schemes were intercountry programs (particularly nursing, health education of the public, school health services, alcoholism, and training of personnel in environmental sanitation and anesthesiology). In the Eastern Mediterranean region 72 health schemes were carried out and direct assistance given to 14 countries. An important scheme regards malaria eradication in Iran, Iraq, Lebanon, Syria, and Jordan. The Western Pacific region carried out 42 projects, particularly concerning nursing, mother and child health, midwifery training, and control of malaria, yaws, and tuberculosis.

About 40% of all health projects assisted by the World Health Organization in 1954 were training programs designed to meet the critical shortage of all categories of health personnel. So far the World Health Organization has awarded over 4,500 fellowships (667 of them in 1954). The tendency is to place a high proportion of fellows for study within their own region. In 1954 regional fellowships accounted for 68% of the total awarded. Aside from obvious savings in travel costs, these regional fellowships have the advantage of enabling students to learn under conditions similar to those in their own countries, so that the process of adapting their acquired knowledge to their home environment is easier. The regular budget of the World Health Organization in 1954 amounted to $8,500,000. In addition, 128 health projects directly involved in the economic development of various countries were made possible by an allocation of $3,977,400 from the United Nations Technical Assistance Funds.

A new challenge faces the World Health Organization as a result of the modern discoveries of science and medicine. For example, to what extent is the balance of nature being affected by the wholesale destruction of insects? What will be the long-term results of the extensive use of antibiotics? How will the disease pattern of a population be influenced by the intense efforts now being made to raise the standards of environmental sanitation and of hygiene in general? How important is the contamination of the air, soil, and water caused by the increased use of atomic energy?

CORRESPONDENCE

BOOKS FOR KOREA

To the Editor:—Some time ago THE JOURNAL ran an announcement of the joint program of the United States Army and the American-Korean Foundation on contributions of medical books and journals. Major Gen. George Armstrong has just written me that to date, under this program, American physicians, hospitals, and state and local medical societies have contributed 122,697 lb. of medical books and journals, which the contributors have valued at $52,750. If anything this evaluation is very low. These shipments have been made to the Alameda Medical Depot. Since that installation will be closed June 30, 1955, its function is being transferred to the newly established Medical Section, Sharpe General Depot, Tracy Annex, Lyoth, Calif., and all future shipments should be sent to that address.

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MYOCARDIAL INFARCTION AND MASTER TWO-STEP TEST

To the Editor:—In THE JOURNAL of May 21, 1955, on page 179, is an article by L. A. Grossman and Milton Grossman entitled "Myocardial Infarction Precipitated by Master Two-Step Test." The object of the paper apparently is to indicate that "the two-step exercise test must not be considered an innocuous procedure . . . despite the absence of deleterious reports." I have personally performed this test thousands of times and have never observed a single untoward incident. I know that, if simple precautionary measures are taken, no coronary episode will occur, except perhaps as a coincidence. Coincidence or not, we have yet to see an accident or read of a single bona fide case in the literature. The precautionary measures are that a 9-lead, or preferably a 12-lead, resting electrocardiogram taken just before the exercise must be normal, that the test be stopped immediately at the appearance of symptoms, and that the exercise never be performed if the patient appears ill or gives a history of recent chest pain suggesting the premonitory phase of an acute episode of coronary disease. My colleagues and I have repeatedly emphasized these points (*M. Clin. North America* **34:**705 [May] 1950; *J. A. M. A.* **15:**452 [Feb. 7] 1953; *Bull. St. Francis Sanator.* **10:**1 [April] 1953).

The authors were aware of these simple admonitions since they stated, "An electrocardiogram should be made just prior to the test (stigmata of coronary artery disease eliminate the need for the test)," but "stigmata of coronary artery disease" were indeed present in their patient, both in the abnormal resting electrocardiogram and in the history of recurrent angina decubitus, suggesting progressive coronary changes. Therefore, in this patient, whoever performed the test did so at his own risk. The six-lead resting electrocardiogram was abnormal. The RS-T segment was depressed in leads 2 and 3; the T wave was small in lead 2 and inverted in lead 3; and the "U" wave was sharply inverted in leads V_2, V_4, and V_6. I suspect that the RS-T segment was depressed in lead V_5, but there are no beats on a horizontal level and so interpretation in this position is impossible. It is probable that still more abnormalities would have been discovered if 9 or 12 leads had been taken.

Another very important point is that only eight trips were performed. Since these require no more effort than walking a short city block, it seems to me that the acute episode of coronary disease had begun before the test was undertaken and was merely coincidental with it. In fact, with a history of angina decubitus, and of pain waking the patient at night and the appearance of "unusual dyspnea" after but eight trips, I strongly suspect that the patient had a silent infarction and that a good history alone would have demonstrated this. Thus the article by L. A. Grossman and Milton Grossman, if anything, substantiates a point I have constantly emphasized, namely, that the two-step test is unnecessary if the resting electrocardiogram is abnormal.

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To the Editor:—We take issue with the article "Myocardial Infarction Precipitated by Master Two-Step Test" by L. A. and Milton Grossman that appeared in the May 21 issue of THE JOURNAL, page 179. The exercise test should not be done on patients who have had a myocardial infarction and have angina decubitus as in the case reported. Furthermore, the article gives the impression that the exercise test with the electrocardiogram was first introduced by A. M. Master and E. T. Oppenheimer in 1929 (*Am. J. M. Sc.* **177:**223,1929). To the best of our knowledge the electrocardiogram was not used in conjunction with an exercise test in that year. What Master and Oppenheimer did have was a table of standard physical exercise based on weight, height, sex, and age, and the circulatory efficiency was determined by comparing the blood pressure and pulse against normal tables. The first to use the exercise test with the electrocardiogram were D. Scherf and S. Goldhammer in 1932 and 1933 (*Ztschr. klin. Med.* **122:**134, 1932; ibid. **124:**111, 1933). At that time no attempt was made to standardize the amount of exercise to be performed by the patient because it is fraught with danger. The work of the heart depends not only on the amount of exercise done in a specified time but also on the physical condition of a person (conditioning) and on emotional lability. The latter two can not be equated and are of great significance in the performance of any exercise (Scherf, D., and Schaffer, A. I.: *Am. Heart J.* **43:**927, 1952). According to Scherf and Schaffer the patient should not exceed that amount of exercise that is quantitatively similar to that which he carries on in his daily routine.

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To the Editor:—In the issue of THE JOURNAL, May 21, 1955, page 179, Grossman and Grossman reported on myocardial infarction precipitated by an exercise test and sounded a warning against injudicious use of the test. I wish to endorse this warning wholeheartedly. I have seen myocardial infarction develop immediately after an exercise test. Frank N. Wilson and his co-worker observed a death following an exercise test (*Am. Heart J.* **22:**64, 1941). An exercise test is superfluous when a typical history of angina pectoris has been obtained. The danger involved in advocating such a test is that a physician who is either too busy to take a thorough history or trusts a machine more than his clinical judgment will make the exercise test routinely on every patient in whom coronary disease is a diagnostic problem. Most patients consult the physician when angina pectoris starts abruptly or when there is a sudden deterioration of existing angina pectoris. Both events point to an acute coronary episode and often are forerunners of a myocardial infarction. An exercise test made in this stage may occasionally have serious consequences. Performance of such a test is permissible only when (1) no dependable history of angina pectoris can be obtained, (2) there is no suspicion of recent myocardial infarction, and (3) the control electrocardiogram shows no abnormality. If this rule is strictly adhered to the number of exercise tests even in a busy cardiological practice is negligible. Incidentally, if the authors of the report quoted here had followed this rule, no exercise test should have been performed, because according to their own description there was "on exertion substernal pain with

left arm radiation. Angina decubitus was also present." Moreover, the control electrocardiogram showed clearly signs that, in connection with the history, pointed to coronary insufficiency.

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To the Editor:—On page 179 of the May 21, 1955, issue of THE JOURNAL L. A. Grossman and Milton Grossman report the case of a 42-year-old man in whom an acute myocardial infarction was precipitated by the Master two-step test. The authors state that their report "emphasizes the necessity of caution in performance of the two-step test and suggests that it is not without danger." If the authors had exercised their well-intentioned caution, a two-step test would not have been done on this patient. The diagnosis of coronary insufficiency is so obvious from this patient's history that a two-step test is totally unnecessary, and under such circumstances the test is a dangerous procedure, as illustrated by the subsequent events in this case. Furthermore, the resting electrocardiogram on this patient is abnormal, and this fact plus the typical history is certainly sufficient for a diagnosis of coronary insufficiency. Even if the resting electrocardiogram had been completely normal, there still was no justification for doing a two-step test in a patient with such a clear-cut history. The Master two-step test was not designed nor advocated by its originator as a diagnostic tool for patients with obvious coronary insufficiency. The diagnosis in this case was easily established without the use of the two-step test. Therefore, the two-step test should not be incriminated in this case.

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REPRINTS

To the Editor:—The reprint collector has recently been editorially scourged in several journals. I would like to defend the "post card operators," of whom I am one. That requests should be courteous is true, yet the necessity of a personal letter of explanation seems absurd. Requests should not be made indiscriminately, yet some of my most valuable reprints were of no immediate foreseeable value when requested. A few may never be read, but most of the few not immediately read were carefully studied when the need arose. The reprint collection is an indispensable method of classifying information, since textbooks rarely supply adequate details for specific problems. The "ambition to build a reprint collection" is admirable, not reprehensible, and all physicians should have and cultivate one assiduously. In order to maintain such a collection the leading journals must be perused frequently. My problem is probably typical of the difficulties of this. The closest medical library is in an adjoining state, and time does not permit more than one or two afternoons a month there. Then I must rapidly assess papers and cannot study and absorb them. I cannot return to the library at will when the need arises; indeed, even physicians living in the same city cannot do so. The file of reprints, which is kept by my desk for ready reference, is used daily. Valuable papers may be read many times in the course of years. The post card operator is one of the author's occupational hazards. It is suggested, however, that requests be directed to the publisher rather than the author. May I suggest that the American Medical Association initiate such a program, which might be expanded to all the journals and perhaps even internationally? A post card order blank might be sold to collectors for a fee high enough to cover printing and mailing costs of reprints, which cards might be common currency among all medical and scientific journals. This would be a business-like procedure by which the collector could indulge himself without stint or apology and the author be spared trouble and expense.

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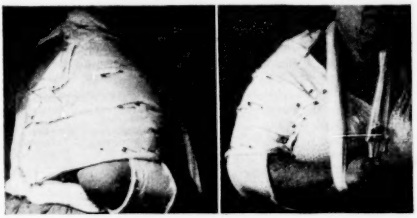
If THE JOURNAL were published infrequently and contained few articles, it might be possible for a publisher to take care of the reprints or the correspondence involved in forwarding these requests to authors, but when several hundred articles are published each year, as in THE JOURNAL, and some of them involve requests amounting to several thousand reprints, it would not be long before it would be necessary to add people to the editorial staff just to take care of the requests for reprints. We have difficulties trying to take care of our normal printing demands, and, if we were to go into the reprint business to supply individual needs, it would upset not only THE JOURNAL and specialty journal printing schedule but also the A. M. A. Order Department, which even now is pressed to meet the demands placed on it.—ED.

MODIFIED VELPEAU BANDAGE

To the Editor:—Adduction immobilization of the scapulohumeral joint in women, particularly in those who are obese, offers a serious problem in relation to the patient's comfort. The bandage most commonly used, the Velpeau, when applied to a woman causes discomfort because of pressure on, and irritation to, the breasts. In addition, unless the bandage is applied over a brassière, the patient will often experience discomfort because of the lack of the accustomed support of the breasts when she assumes an upright position. This problem has been solved with gratifying results in several obese patients after operation, one of whom is shown in the figure. By use of the



patient's brassière supplemented with pinned flannel strips, the Velpeau principle of immobilization was obtained. This modification of the Velpeau bandage offers the following advantages besides those associated with the patient's comfort: (1) ease of application in the anesthetized patient (the brassière should be available in the operating room and is applied after the surgical procedure); (2) ease of care of the bandage, since any portion can be tightened or loosened independently; and (3) ease of maintenance of axillary hygiene.

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FLUID FOR SHIPPING WHOLE BLOOD SPECIMENS

To the Editor:—Readers of THE JOURNAL who wish to send blood specimens through the mail for blood group antigen and antibodies studies may find some use for the fluid here described. It consists of equal parts of whole blood and Alsever's solution, with a drop of penicillin and streptomycin to give a final concentration of about 30 units and 0.005 mg. per milliliter respectively. With the use of sterile technique the blood is drawn directly into the Alsever's solution, the antibiotic is added promptly, and the container is sealed with a rubber bung for best results. Since November, 1952, I have used this fluid to prepare a diagnostic panel of red cells (PANOCELL), which is shipped unrefrigerated throughout the United States every two weeks via air mail. Recently about 450 different blood specimens were sent in this way from New York to London for blood group studies. All of them were reported to have arrived in excellent condition.

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COUNCIL ON MEDICAL SERVICE

This is the 18th in a series of studies made by the Committee on Indigent Care of the Council on Medical Service concerning local plans for medical care of the indigent.

MEDICAL CARE FOR THE INDIGENT IN NORTH CAROLINA

This is a study of medical care available to the indigent and medically indigent in North Carolina. In 1951, the state had a population of 4,061,929, predominantly rural. The main agricultural crop is tobacco, though cotton, peanuts, and grain are also important; however, manufactured products have a sales volume several times that of crops and livestock. The state leads the nation in the production of textiles, tobacco products, and wooden furniture. The largest city is Charlotte, county seat of Mecklenburg County and an important textile center, with a population of 134,042.

ELIGIBLE POPULATION

North Carolina's indigents receive publicly financed medical care primarily through various hospitalization programs. Public assistance clients on the aid to dependent children and the aid to disabled persons and old age assistance rolls are automatically eligible for hospital care; other applicants are eligible for hospital care only when specifically so certified by county welfare departments. The following table shows the number eligible and the number receiving hospital assistance during two months in 1954.

TABLE 1.—*Assistance and Hospital Care Recipients, North Carolina*

	Assistance Recipients, May, 1954	Hospital Care Recipients, March, 1954
General assistance (counties)	5,724	Not available
Medical indigents *	.....	1,777
Public assistance (state)		
Old age assistance	51,369	720
Aid to dependent children	80,835 (18,788 families)	408
Assistance to blind	4,701	Not available †
Aid to disabled	9,038	264

* Includes all clients certified by county welfare departments to medical care commission, regardless of assistance program.
† Not automatically eligible; must be certified by county welfare departments for hospital care.

Aside from their share in the cost of public assistance care, the counties are free to establish indigent care plans without state supervision. During May, 1954, counties made medical care payments for 1,868 clients and hospital payments for 2,533; however, some of these clients may also have had part of their medical bills paid from the other programs within the state (as will be explained below).

ADMINISTRATION

The indigent care situation in North Carolina is a complex one, and since several public agencies and several private agencies finance medical or hospital care, their functions frequently overlap. For this reason, the administration and scope of each agency's program will be described separately.

State Welfare Department.—The North Carolina State Board of Public Welfare provides care for public assistance recipients receiving old age assistance, aid to dependent children, and aid to the disabled. Administration is at the county level, and county departments determine the applicant's eligibility in conformity with state-wide standards. Those certified as eligible for these assistance programs are automatically eligible for hospital care upon certification of medical need by the attending physician or a staff physician at the hospital. Hospitals submit monthly bills to the county welfare departments, using a specified form that indicates the number of days of authorized care provided to assistance clients. The county pays for this care from its own funds and matching funds allocated to it by the state welfare department; however, payment from matching funds during a given month may not exceed the difference between the client's assistance grant and the maximum allowable for his category, though the total payment may be extended over several months. The county usually supplements above the base payment of $8 per day of matched funds up to a rate established by the hospitals. The state welfare department establishes the rules and regulations governing local procedures and compiles the data submitted by the county departments.

Memorial Hospital.—The University of North Carolina's Memorial Hospital at Chapel Hill, under the direction of the university's division of health affairs, provides extensive inpatient and outpatient service to indigent residents of the state. The hospital is reimbursed from all hospital programs in the state except the Reynolds fund and gets an extra direct appropriation from the state legislature for operating costs.

State Blind Commission.—The North Carolina State Commission for the Blind administers the state program for the blind through its social service, medical, and rehabilitation divisions. Medical care provided through this program is limited to prevention of blindness and conservation or restoration of vision; eligibility is based on medical indigency, as determined by commission case workers operating through the county welfare departments. Any additional medical care must be obtained through the various general and private assistance programs. Two private groups, the state Association for the Blind and the Lions clubs, also provide a large amount of assistance to the needy blind of the state.

Other State Health Programs.—Other state-sponsored programs also provide a certain amount of medical assistance to indigents within the categories aided. The state health department, for instance, administers the crippled children's program, prenatal and well-baby clinics, a program for hospitalization of premature infants, and cancer detection clinics and cancer treatment (the latter only upon certification by the county welfare department), and proposes to set up some 10 mental health centers throughout the state. The vocational rehabilitation program, under federal sponsorship, furnishes comprehensive care for the handicapped, and the school health defect correction program allots money to county school superintendents to help provide medical and dental care for school children.

Medical Care Commission.—The North Carolina Medical Care Commission provides aid to indigent patients who are not eligible for care under the public assistance programs. The board is comprised of 20 members, including the heads of the state health and welfare departments, who serve ex officio without voting power, and 18 members appointed by the governor, including representatives of the hospitals and of the medical and related professions. The commission has an executive secretary and staff, who administer its four main programs: hospital construction, including the building of health centers and nursing homes, in conjunction with the Hill-Burton hospital construction program; hospital care for the indigent; loans for students of medicine, dentistry, pharmacy, and nursing; and hospital licensure. Specific areas are dealt with by 10 standing committees appointed by the chairman, among them one on contributions for indigent patients, and an executive committee acts on matters arising between the commission's quarterly meetings. A state hospital advisory council, created by law, may be consulted concerning the hospital program. Applicants are eligible for aid from the commission if their monthly income is less than minimum monthly subsistence requirements plus $20 per month for a six-months' period; county welfare department case workers investigate and certify those eligible. Recertification is required for each admission to the hospital, as, for instance, with clients who have several illnesses in succession; clients with long-term illnesses must be discharged, recertified, and readmitted on June 30 and Dec. 31 of each year they are hospitalized. The county welfare department may also certify for medical care commission aid those patients who have exhausted their own funds or hospital insurance during the course of hospitalization, payment beginning with the date of medical indigency; public assistance clients may be certified if their monthly grants are within $4 of the federal maximum allowable for the category in which they are enrolled.

Members of the Committee on Indigent Care are: Drs. H. B. Mulholland, Chairman, Charlottesville, Va.; E. A. Ockuly, Toledo, Ohio; Dean W. Roberts, Baltimore; A. J. Bowles, Seattle; E. P. Coleman, Canton, Ill.; J. L. Lattimore, Topeka, Kan.; and I. Jay Brightman, Albany, N. Y.; and Mr. R. M. Hilliard, Consultant, Chicago.

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Duke Endowment.—The Duke endowment, created in 1924, has funds available for superannuated preachers, rural churches, orphan care, operation of educational institutions, and hospitalization. The majority of the funds have been used for these last two programs. Revenues of the fund are administered by a board of trustees, which has established a hospital section to administer this aspect of the trust; 32% of the annual net revenue remaining, after the addition of 10% to the principal, is to be used for maintaining and securing nonprofit hospitals in North and South Carolina. Hospitals submit an annual comprehensive report to the hospital section of the endowment, which then authorizes payment to all hospitals accepted for participation. Payment is based on the number of beds utilized for which the patient himself pays less than $4 per day; these funds, therefore, provide part of the cost of hospitalization for clients of any of the general or public assistance programs.

Reynolds Fund.—The Kate Bitting Reynolds hospital trust fund also aids indigent patients in some North Carolina hospitals. This program allocates three-quarters of the income of a trust fund in excess of 4 million dollars to reimbursement of hospitals for indigent care, provided the hospital maintains a certain proportion (currently 4.5%) of "certified" indigent patient-days to total patient-days. Certification is by the county welfare departments. In establishing the plan, the trustees consulted both the Duke endowment and the medical care commission; funds are confined to public and nonprofit hospitals.

COUNTY PROGRAMS

The above programs are all state-wide in scope. However, the counties also provide a limited amount of medical care for the indigent, although there is no common plan or program for providing such care. The state board of public health exercises direct supervision only over public assistance; counties develop their own methods of providing care for other indigent clients with state consultation. County welfare departments certify eligibility for all programs, state-wide as well as local, according to the standards established for each, and are expected to make arrangements with local hospitals for indigent care. In general, the emphasis in the counties as in the state plans is on hospital care, and most physicians' services are provided without reimbursement from public funds, although some counties do pay some of the cost of indigent care by private physicians. The state has 100 counties, which differ widely in indigent care provisions. All counties provide funds for public assistance clients, but, during a typical month, 12 counties (mainly small ones) made no general assistance grants; on the other hand, only 7 counties made no payments for hospitalization of those indigents not covered by the state-wide programs. In addition, about 30 counties make general funds available to local hospitals to help make up their deficits. Almost three-quarters of the counties made some payment for medical care (other than hospitalization) but a comparatively small number of clients receive such aid. In some counties, the health officer provides limited medical care for the indigent, but, as a general rule, care is provided by private physicians; the physician may be reimbursed by the welfare department in some counties, but ordinarily this care is provided on an individual and private basis.

Mecklenburg County.—Charlotte, the state's largest city, and Mecklenburg County, of which it is the seat, provide an exception to the general format for local care. The county pays its hospitals the full cost of care for indigent patients (minus whatever funds are contributed by the state) and pays physicians limited fees for the care of the indigent; it also provides some auxiliary services, such as x-rays, prosthetic appliances, and transportation. All people of Mecklenburg County, including city residents, receive the same medical care. Charlotte, itself, also has an indigent care program, applying to residents of the city. Private physicians are paid for authorized visits and the city assumes the support of the outpatient departments and emergency rooms at the local hospitals. Payment is made to the hospitals on the basis of the deficit incurred in the preceding year. The city also provides a clinic for the indigent, which is open two hours daily for five days a week, as well as numerous specialized public health services. It should be noted, however, that both Mecklenburg County and Charlotte are exceptions, rather than the rule, so far as local programs of indigent care are concerned. Mecklenburg County is by far the wealthiest in the state.

SERVICES PROVIDED

As noted, the publicly financed and philanthropic trust programs are concerned primarily with hospital care; the counties reimburse physicians for some of their services, but, except for the commission for the blind's program, most private physicians treat the indigent without reimbursement. The blind assistance program provides eye examinations at home, in the physician's office, or in a clinic and nonsurgical hospital treatment, surgery, glasses and optical appliances, drugs, and transportation. The health department (as noted) also provides numerous outpatient services, as does the crippled children's program. In the main, though, organized indigent care in North Carolina consists of hospital care. Indigent hospital services are, in general, equivalent to those provided to private patients, except that ward accommodations are used where possible. A 1952 study shows that indigent patients had an average hospital stay almost twice as long as that for all hospital patients; the reasons suggested for this range from the comparative physical and emotional condition of indigent and nonindigent patients, to a staff desire to avoid discrimination against the indigent. Regardless of the reason, the greater length of stay seems to indicate that the indigent who receive hospital care have service at least equal to that provided other residents of their community. On the other hand, a smaller proportion of the indigent population is actually admitted to the hospitals than of the state's population as a whole.

PROVIDERS OF SERVICE

According to 1954 surveys, North Carolina has a total of 189 hospitals, of which 149 are short-term general and special hospitals. Ninety-nine of these are nonprofit hospitals with 9,200 beds, 18 are proprietary hospitals with 590 beds, and 32 are state or local governmental hospitals with 3,100 beds. There are 6 long-term general and special hospitals with 440 beds, 10 mental hospitals with 11,500 beds, and 17 tuberculosis hospitals with 2,000 beds. The university hospital at Chapel Hill, established in 1952, has 239 beds and 45 bassinets. In order to participate in either the public assistance, medical care commission or Reynolds fund indigent care programs, a hospital must be approved by the medical care commission; however, the Reynolds fund will not aid privately owned hospitals, even those approved for the other programs. The Duke endowment makes its own determination as to which hospitals to aid and will provide funds to both nonprofit and private hospitals.

During calendar year 1953, the medical care commission paid part of the cost of care for indigents at 121 hospitals, including 19 privately owned hospitals; Duke endowment made payments to 116 hospitals, including 13 privately owned; the Reynolds fund made payments to 85 public or nonprofit hospitals. In 1952, the latest year for which complete data are available, the Duke endowment made payments to 117 hospitals, all but one of which were general hospitals. These hospitals provided a total of 2,968,956 days care in 1952, of which 396,217 were "free" days (days for which the patient paid less than $4) and reimbursable by the fund; this amounted to 13.3% of the total patient-days. It is apparent from these figures that almost all the general hospitals in the state participate in both the medical care commission and the Duke endowment programs and that approximately two-thirds of the public and nonprofit hospitals are aided by the Reynolds fund. Other state agencies, such as the health department and blind commission, and county welfare departments utilize and reimburse such vendors and hospitals as are necessary for their individual programs.

PAYMENT FOR SERVICES

Physicians who serve health department programs usually receive payment on a fee-for-service basis as do the ophthalmologists serving the blind commission; counties may also reimburse physicians for care to the indigent, but few counties actually pay for more than a small percentage of the indigents treated by private physicians. Only Mecklenburg County and Charlotte seem to have any formal and organized program for payment of attending physicians; the city pays $4 for each authorized visit, while in the remainder of the county (outside the city) physicians receive from $4 to $15 for treatment of indigent patients. Reimbursement for auxiliary services, drugs, appliances, and the like is in much the same situation as payment of physicians' services; the health department and blind

commission will pay for such items and Mecklenburg County also includes them in its program, but such payment is rare and irregular in the other counties. In the hospital care programs, such items are not specifically included and, if provided, must be provided by the hospital itself as part of the services covered by the per diem rate.

TABLE 2.—*Cases and Obligations, All Programs, May, 1954*

Program: Welfare Department	Cases	Obligations Incurred
Old age assistance	51,369	$1,565,909.00 *
Hospitalization, vendor payments	.....	14,430.00
Aid to dependent children	18,788	1,123,389.00 *
Hospitalization, vendor payments	.....	8,639.50
Aid to permanently and totally disabled	9,038	324,348.00 *
Hospitalization, vendor payments	.....	4,644.00
General assistance	2,206	48,028.17
Other financial assistance		
Medical care	1,868	11,559.56
Hospitalization	2,583	152,453.72

* Exclusive of vendor payments for hospitalization.

Payment to the hospitals under the two state programs and the two private fund programs is on a flat per diem rate for the number of certified indigent care days provided by the hospital. However, while the other three programs have a set rate, changed only by legislation or state authorization, or in the Duke endowment, by the board, the Reynolds fund payment is determined by the total patient-days paid for—i. e., a set total is paid out each year, which is divided among the participating hospitals in accordance with the number of indigent care days at each. In 1952, this amounted to 79.6 cents per day; in 1953, the rate was 74.5 cents; the Duke endowment has paid $1 per day from the beginning of its program. Payment for care of public assistance clients is set at $8 per diem, increased from $6 as of July 1, 1954. Half of this amount is paid from the federal grant and the remainder is divided equally between state and county. However, this payment obtains only when the client's assistance grant is less than the maximum for his category; if all assistance funds are paid out in the regular grant, any payment for hospital care becomes the responsibility of the individual county and is optional with the county, as a general assistance payment.

The medical care commission payments amount to $1.50 per diem, increased from $1 in July, 1951. The county is presumed to be responsible for paying the full rate for indigent care unless the hospital is notified to the contrary; the commission pays the hospitals monthly upon receipt of a specified summary form listing the number of free days care and attaching the individual certifications. The Duke endowment pays on the basis of "free beds," defined as those beds for which the patient himself pays less than $4 per day; the program therefore includes beds partially subsidized through other programs. This program is now being reorganized to separate the number of days for which the patient pays from those that are "free"; beds of publicly certified indigents will continue to be eligible, and hospitals will now be credited for care of charity days for newborn infants, at one-third the value of adult days. The endowment pays on the basis of comprehensive annual reports and will reimburse public and nonprofit hospitals and private hospitals leased on a nonprofit basis.

COSTS AND FINANCIAL SUPPORT

As mentioned above, federal, state, and county governments contribute to payment for hospital care for public assistance patients, when the patient's monthly grant is sufficiently below the maximum allowable in his category. During the month of May, 1954, case loads and obligations incurred were as shown in table 2.

Hospitalization costs of all state-wide programs, private and public, excluding the payments by the individual counties for their own programs are given in table 3 for the fiscal years 1953 and 1954 or calendar years 1952 and 1953.

Also, during the fiscal year 1954 expenditures for the blind amounted to $39,000 for examinations, $43,215 for surgery, and $65,842 for glasses, about $50,000 of which was contributed by the Lions clubs of the state. Health department medical program expenses are estimated at over $800,000 per year. County departments of public welfare expended an additional $137,612 for medical care (other than hospitalization).

North Carolina Memorial Hospital, because of recent expansion and low occupancy rates, receives an appropriation of $922,000 from the state to cover the cost of operation; when the hospital is more fully occupied, it is expected that only $500,000 will be needed annually to pay for ward patients for whom full agency support cannot be obtained. Funds for the operation of the medical care commission's indigent hospitalization program are appropriated biannually by the North Carolina general assembly; for the 1951-1953 biennium, $675,000 was appropriated; for 1953-1955, $750,000 has been appropriated. As has been noted, county programs are wholly optional; each county may appropriate what it sees fit for indigent care and may make payment to the degree that it considers essential. Counties have increased appropriations for this purpose substantially over the last decade.

MEDICAL SOCIETY RELATIONSHIP

During World War II, the medical profession, because of concern over the severe shortage of physicians and the growing governmental participation in health functions, promoted local efforts toward improvement in various phases of public health. The medical association's deliberations were one of the significant factors leading to the formation of the Broughton-Poe commission, which surveyed the state's medical needs, made recommendations, and laid the ground work for the improvement of the state's hospital facilities. The medical profession, through some of its individual members, also played a part in the establishment of the medical care commission.

At present, the medical society appoints an advisory committee to the state welfare board as requested by the agency, which is consulted concerning the health problems of the state programs; a representative of the state health offices is a member of this committee, and problems of his department may also be considered by the group. The medical care commission membership includes three members nominated by the medical society, as well as several physician members at large chosen by the governor; the commission's hospital advisory group also includes physician representatives. The state blind commission also has an advisory group, composed entirely of ophthalmologists practicing in the state. In general, the medical profession supports present programs for indigent care. However, there is some disagreement as to the future expansion of these programs; some physicians favor extension of the programs to include payments to physicians for indigent care, while others oppose any further expansion of state-wide plans and prefer leaving expansion of indigent care plans to the individual counties.

TABLE 3.—*Indigent Hospitalization Costs in North Carolina, by Program*

Program	1952	1953	1954
Welfare department	$ 97,136 *	$ 213,312 *	$ 273,462 *
Old age assistance	53,792 *	119,378 *	139,713 *
Aid to dependent children	33,979 *	66,500 *	90,428 *
Aid to disabled	9,365 *	27,434 *	43,319 *
State blind assistance	.....	.....	111,528 *
Medical care commission	285,754	284,290	309,207
Duke endowment	396,217	417,246	.....
Kate Bitting Reynolds fund	160,000	160,000	.....
County department of public welfare funds	1,117,633 *	1,391,907 *	1,613,901 *

* Fiscal year.

SUMMARY

Indigent care in North Carolina consists mainly in the hospitalization of the indigent sick; the four state-wide programs concern themselves solely with this service and this is the main concern of the various county-sponsored plans. State agencies reimburse private physicians for their services under state-sponsored clinic programs, as do a few of the counties, but, as

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a general rule, the physician provides his services locally as a private act of charity to the individual patient, without hope of reimbursement from county or state. The state-wide programs include two government programs and two administered by private philanthropic organizations. The state public welfare board pays for hospitalization of clients of three of the public assistance programs, provided that the client's assistance grant is sufficiently below the maximum for that grant category; the medical care commission, a board composed mainly of private citizens, disburses funds for hospital care of indigents not eligible for such care under welfare department regulations. Two private funds, the Duke endowment and the Kate Bitting Reynolds fund, pay hospitals a subsidy based upon the number of days of "free care" provided; there is frequent overlapping of the programs, so that a patient's care may be paid for from several different sources. The state university has a memorial hospital that also provides a certain amount of care to indigents all over the state. Medical programs serving certain classes of indigents are run by the health department and the blind commission.

The counties establish programs as they are able to finance them; most have concentrated on hospital care, as has the state-wide program. However, counties also pay physicians for some services. Payment to the hospitals is usually on a flat per diem rate basis; the welfare department pays $8 for all public assistance cases and this is usually supplemented by county contributions to the hospital cost; the medical care commission pays $1.50; the Duke endowment pays $1, and the Reynolds fund prorates its annual allotment on the basis of the number of indigent days care provided.

County welfare departments, except for the Duke endowment, determine patient eligibility in almost all cases; the two state agencies pay on the basis of the client's indigency, while the Duke endowment pays only on those patient days for which the patient himself pays less than $4. All of the counties make some payment toward indigent hospital care; in addition, some 30 counties pay a lump sum against the deficits of local hospitals. However, the amount paid per diem varies so widely from county to county that no general statements can be made on the subject of county reimbursement. It should be noted that the income level of the different counties varies widely, so that it may well be true that one county cannot afford the same degree of indigent care as another.

Because of the multitude of agencies and plans involved in North Carolina indigent care, it is difficult to assess the over-all worth of the system. Although the complexities are mitigated by some degree of cooperation between the various agencies involved, it might be more efficient, both for the agencies and for the indigent client, if one agency were responsible for the medical care of all clients of a particular program. For example, in three of the public assistance programs, the client receives his subsistence grant from a state agency and may receive hospital care through the funds of one state agency, two private philanthropies and the county of his residence; in the fourth public assistance program (blind aid), the grant comes from the state as well as a large amount of medical care directed specifically toward his blindness, but he may also receive hospital care from the two funds and the county. Yet in actual provision of this aid, there appears to be little coordination of state and county, of state and private funds, or even of the aid provided by the various state agencies. The client may receive adequate hospital care under this program, but the multiplicity of sources of care makes it difficult to be certain and causes unnecessary administrative confusion. The program might be improved by, at least, accepting all medical care for public assistance cases as the responsibility of a single state agency and placing responsibility for all other care under the county welfare departments; private funds could be distributed through these agencies. In this way, care provided would be more uniform and more uniformly reimbursed, providing more equal treatment for vendors of medical care and for recipients. The bases upon which county welfare departments certify eligibility may need reexamination, especially since standards for eligibility adopted for some programs are more liberal than those for others, dependent upon available funds. A client who would be eligible by one program's standards, is not eligible by another's, whereas it is a basic principle of indigent care that all indigents should receive equal care, within the limit of available resources and facilities. Statewide standards are in effect in all counties with three financial levels in use as the basis for certification. Usually a more liberal basis is used for programs financed from federal funds.

North Carolina has concentrated on hospital care, although limited medical care is available in many counties. Hospital care is more a fixed expense than physician's care, involves more operating expense and less (proportionately) that can be supported by the vendor as a personal charity. However, to provide adequate care for the indigent, a formal plan might be developed to provide physicians' and auxiliary services outside the hospital, both as a matter of economy (to curtail unnecessary indigent hospitalization) and as a health measure (to insure care for indigents who do not require hospitalization but are otherwise unprovided with health care). The indigent of North Carolina may receive adequate hospital care, but the complexity of the method used to provide this care and to reimburse the hospitals makes it extremely difficult to determine whether all those needing care receive it and also whether the hospitals providing care are receiving adequate remuneration for their services. Except in a few areas, physician's care is primarily based on the physician's personal charity rather than on any organized, uniform plan. Other health and auxiliary services seem to be almost entirely a local option.

LAW DEPARTMENT

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Dermatitis Venenata as a Compensable Injury.—The claimant, a female employee of the Wyoming State Training School, filed suit for an award under the workmen's compensation act. From a judgment denying compensation, the claimant appealed to the Supreme Court of Wyoming.

The claimant worked as a nurse's aid in the school dispensary. In such position she contacted and used a number of drugs, including mercurial products, and during the period of her employment she sustained a dermatitis venenata. It appeared that the condition was brought about by the handling of various drugs. The employee who preceded the plaintiff in her job and the two who succeeded her at the dispensary contracted the same disease but not as seriously. Furthermore, the superintendent of the school ordered patch tests to be conducted on the two employees who succeeded the claimant with ammoniated mercury and other drugs in use there, which produced positive results. The medical evidence indicated that some of the drugs used at the dispensary would not ordinarily cause dermatitis venenata but would do so if the person coming in contact therewith was peculiarly susceptible to the disease.

The Supreme Court was confronted with two issues: whether the claimant had suffered an accident while at work, and whether the claimant contracted the disease because of her peculiar susceptibility. The Court decided both issues in favor of the claimant. An accident, said the Court, is an unexpected event that is not sought after or predictable. In this sense, the contracting of the disease was the unexpected result of using in a normal manner the various drugs kept at the dispensary for medical purposes. This was an accident within the meaning of the compensation act. The Court also stated that the workmen's compensation law was drafted to cover all injuries sustained by an employee while at work regardless of a peculiar susceptibility to the injury, even though under the same circumstances a different employee would not have sustained the injury. Accordingly, the Court reversed the judgment for the school and ordered the trial court to enter an award for the employee. *Wright v. Wyoming State Training School, 255 P. (2d) 211 (Wyo., 1953).*

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

The Diagnosis of Mitral Insufficiency. V. O. Björk, S. R. Kjellberg, G. Malmström and U. Rudhe. Am. Heart J. **49:**719-723 (May) 1955 [St. Louis].

Since surgical treatment has little to offer in mitral insufficiency, Björk and associates feel that efforts should be made to achieve a correct diagnosis without surgery. When the clinical symptoms and catheterization of the left side of the heart suggest a significant regurgitation, angiocardiography can be performed by injecting contrast medium through the needle into the left atrium in order to visualize the mitral valves. By this method it is possible to prove the diagnosis of a mitral insufficiency and avoid an exploratory cardiotomy.

A Comparison of Rauwolfia Serpentina Compounds, Crude Root, Alseroxylon Derivative, and Single Alkaloid, in the Treatment of Hypertension. H. Tuchman and C. W. Crumpton. Am. Heart J. **49:**742-750 (May) 1955 [St. Louis].

Tuchman and Crumpton present observations on the continued oral administration of Raudixin, reserpine, Rauwiloid, and Serpasil. These drugs were given to 47 patients from the wards of the University of Wisconsin Hospitals or observed in the Hypertension Clinic. There were 22 men and 25 women with mild to severe arterial hypertension. Their ages ranged from 20 to 68 years. These patients were observed for from 2 to 14 months as outpatients. The average reduction was 35 mm. Hg in the mean arterial blood pressure. This decrease is statistically significant. Generally there was no significant difference in the blood pressure-lowering effect between these agents. The blood pressure-lowering effect of the single alkaloid (reserpine, Serpasil) compared with the crude root (Raudixin) more nearly approached the ratio of 1:750 or 1:500 than the original estimation of 1:1,000. Observations also suggested that one is able to distinguish between two doses of reserpine (0.2 and 0.85 mg.) that differ only by a factor of about four. The latent period that may precede the therapeutic effect of these compounds makes prolonged administration important in Rauwolfia therapy. An adequate therapeutic trial is necessary to ascertain whether a patient will respond to Rauwolfia serpentina.

Clinical Results with Use of Roxinil (An Extract of Rauwolfia Serpentina) in the Treatment of Hypertension. J. H. Moyer, L. Beazley, R. McConn and others. Am. Heart J. **49:**751-757 (May) 1955 [St. Louis].

Roxinil contains multiple alkaloids of Rauwolfia serpentina, but in different proportions than in preparations currently available. This extract is an attempt to combine the potent and immediate depressor effects of the serpentine-type alkaloids with the hypnotic action of the reserpine-like materials. Laboratory observations indicate that Roxinil retains some adrenergic blocking action of the ajmoline and serpentine group of alkaloids. Forty patients with essential hypertension of variable severity were treated with Roxinil, and the results were compared with those obtained with the alseroxylon fraction as well as the pure alkaloid, reserpine. Roxinil proved to be an effective agent for reducing the blood pressure in patients with hypertension. It reduced the pressure in patients with severe disease as well as in patients with disease of mild to moderate severity. However, the patients in whom the pressure returned to normotensive levels were predominantly from the group with less severe disease. The blood pressure response, side-reactions, and general clinical responses with Roxinil were quite similar to those observed with other extracts of Rauwolfia serpentina.

Myasthenia Gravis: Diagnosis of Atypical Forms. E. Stiefel. Rev. clín. españ. **56:**265-268 (Feb. 28) 1955 (In Spanish) [Madrid, Spain].

Myasthenia gravis is a progressive nonhereditary disease that affects the muscles of the face, lips, tongue, throat, and neck. It is more frequent in women than in men. The author reports two cases, one in a man, who showed typical symptoms and reacted favorably to prostigmine. The treatment caused improvement of his working capacity that was still maintained one year after treatment was started. The other patient, a 22-year-old woman, had an atypical form of the disease. Her nuchal and masseter muscles were especially affected. She was unable to maintain her head in the erect position and mastication was very difficult. The first attack occurred when she was 15 years old. Three subsequent attacks have occurred, each being more acute than the previous one. In all four attacks prostigmine gave no relief. An electrodiagnosis of the affected muscles was not made. Roentgenograms of the thorax did not show an enlarged thymus. Roentgen therapy over the thymus region gave no relief. A biopsy specimen showed the typical histopathological changes of myasthenia gravis, consisting of almost complete loss of transverse striations of muscle fibers, multiplication of the nuclei, fatty degeneration of the sarcolemma, and massive lymphocytic infiltration on the edges of the muscle fibers. An intense treatment with intravenous injections of vitamin B_6 for a month produced marked improvement consisting of disappearance of fatigability and return of muscular power to the affected muscles. The patient became able to maintain her head either erect or at any posture, and her mastication became normal.

Pneumonia Occurring During ACTH and Cortisone Therapy. J. H. Jacobs and F. C. Rose. Tubercle **36:**113-118 (April) 1955 [London, England].

Jacobs and Rose present the histories of three patients with rheumatoid arthritis in whom pneumonia developed while they were being treated with cortisone or corticotropin. Although death followed pneumonia in all three, other associated factors were present. In the first patient hypokalemia was noted on admission. The second patient had monocytic leukemia, which may explain this woman's poor response to infection. In the third patient a laparotomy had been performed during the attack of pneumonia. The symptoms and signs of pneumonia had been masked in the first two patients by treatment with corticotropin and in the third patient by treatment with cortisone. The first patient had no history of respiratory symptoms and examination revealed neither bronchial breathing nor adventitious sounds. In the second patient there was a sudden onset of cough, expectoration of blood-stained sputum, and dyspnea. Bronchial breathing was not heard six hours before death, even though widespread consolidation was found at autopsy. The third patient, however, showed signs of consolidation within a few hours of the onset of his pain although he had not complained of any symptoms previously. All three patients were under close medical supervision, two being in the hospital when pneumonia developed. This shows that even with daily medical supervision, pneumonia is not easily diagnosed in patients on steroid therapy, and may reveal itself only as an acute pyrexial illness with few physical signs. The findings in the adrenals may be correlated with the hormone therapy received. In the first patient in whom corticotropin therapy had been stopped three days before death, the

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The place of publication of the periodicals appears in brackets preceding each abstract.

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cells of the adrenal cortex appeared in a resting phase with lipoid infiltration. The second patient, who had been given corticotropin until the day she died, showed an active adrenal cortex with moderate depletion of lipoid granules. The adrenals of the third patient showed severe atrophy with hemorrhage. It would seem that the exogenous cortisone had so depressed his adrenal glands that they were unable to respond during this period of extra stress. These three patients died in the course of one year, during which time 106 inpatients with rheumatoid arthritis were treated; 26 of these received either cortisone or corticotropin, but no case of pneumonia, other than the three reported, occurred in that group. Although opinion differs on whether there is an increased liability to infection with cortisone and corticotropin therapy in man, there is general agreement that steroid therapy masks infection. Increased doses of steroid hormones and antibiotics are recommended when pneumonia develops in patients who are being treated with cortisone or corticotropin.

Comparative Study of Smoking Habits of Physicians. L. S. Snegireff and O. M. Lombard. New England J. Med. **252:**691-696 (April 28) 1955 [Boston].

Questionnaires were distributed to Massachusetts physicians requesting information about their personal smoking habits. This report is concerned with the smoking habits in relation to the type of practice of the 4,171 responding physicians. The types of practice were combined into three main groups on the basis of the magnitude of the rates of smokers. Group 1 comprised specialties with rates for not smoking that were above the average for all types (33.5%); group 2 included the general practitioners, whose rate was close to the average, and group 3 other specialties, with rates below the average. A large proportion of physicians have stopped smoking. Among physicians who were smoking at the time of the survey the proportion who accepted a possible relation between cigarette smoking and lung cancer varied with the type of practice. There was a peculiar cleavage of physicians in the three type-of-practice groups giving different advice to heavy cigarette smokers: 55% of group 1, 64% of group 2, and 63% of group 3 advised a reduction of cigarette smoking, whereas 36% of group 1, 34% of group 2, and 28% of group 3 recommended that heavy smokers stop smoking. Physicians in different types of practice are tending toward less cigarette smoking. A possible explanation for this tendency is the growing interest in the conceivable relation between cigarette smoking and lung cancer.

Aerosol Therapy in Ulcerocavitary Pulmonary Tuberculosis: Preliminary Report. G. Toriggia and G. Foddai. Riforma med. **69:**324-327 (March 19) 1955 (In Italian) [Naples, Italy].

Good results were obtained with aerosol therapy in 40 patients with ulcerocavitary pulmonary tuberculosis of long standing in whom earlier antituberculous therapy had been of little avail. Although at the time of admission collapse therapy, exeresis, and prolonged bed rest were deemed to be the best treatment for these patients, aerosol therapy with isoniazid was started. The daily dose consisted of 250 mg. of isoniazid diluted in 1 cc. of "Privina," a substance with a good vasoconstrictive and decongestive action on the bronchial mucosa. The patients received this dose over a 20 minute period, and they were also given 1 gm. of streptomycin every other day and 12 gm. of *p*-aminosalicylic acid every day. The therapy was continued for 80 to 90 days with a one week treatment-free period every 20 days. Toxic manifestations or hemoptyses were never observed during the course of the therapy. There were no side-effects in one patient who had shown intolerance for other antituberculous drugs, including isoniazid when he received it orally. The best results were obtained in patients with isolated cavities in the upper lobes or in the apex of the lower lobes. The response was less prompt in patients with isolated or multiple cavities with much fibrosclerotic tissue around the cavity. Good results were also obtained in those patients in whom earlier treatment with isoniazid given orally in large quantities had not been successful. The cavitary lesions that were seen in two patients at the time of admission could no longer be seen on roentgenograms that were taken at the end of the treatment. In other patients the regression of the lesions, although not complete, was evident. The authors conclude that aerosol therapy with isoniazid is useful as an adjunct to the various antituberculous therapies. They feel that besides the cavitary forms of pulmonary tuberculosis this therapy may also benefit the tuberculous bronchitis that often accompanies the specific parenchymal processes of the lung.

The Problem of Mediastinal Tuberculosis. H. A. Lyons and C. F. Storey. Am. Rev. Tuberc. **71:**635-667 (May) 1955 [New York].

Ten illustrative cases of mediastinal tuberculosis are described in nine men and one woman between the ages of 18 and 64 years. Involvement of the mediastinum with tuberculosis is a fairly frequent, though often unrecognized, condition. It can produce effects that are secondary and that often present a confusing clinical picture unless the primary cause, tuberculosis, is considered and attempts are made to discover its presence. The clinical appearance produced by mediastinal tuberculosis, either through its active granulomatous inflammatory reaction or by its healing proliferative process, depends on which of the anatomic structures may be involved by the tuberculous process. The tracheobronchial air passages, the mediastinal vascular structures, the esophagus, the heart, and the pericardium may separately or in combination be involved by the mediastinal tuberculous process. There are mediastinal tuberculous lesions which are of significant size to be recognized on chest roentgenograms or at thoracotomy, but which are asymptomatic at least at the time of their first recognition. The effects on these various mediastinal structures may be produced by extrinsic, erosive, or intrinsic involvement. The effects on the tracheobronchial tree may lead to various forms of pulmonary suppurative disease and/or atelectasis. Obstruction of the superior vena cava may be produced by tuberculosis of the mediastinal lymph nodes and esophageal dysphagia may be the result of the involvement of the esophagus by tuberculosis. Thus, the attention of the physician may be directed to the secondary effect at the risk of overlooking the primary cause, i. e., mediastinal tuberculosis. Diagnostic procedures of each type of involvement are sometimes quite extensive before the nature of the process is understood. These include bronchoscopy, special roentgenographic techniques, angiocardiography, and even exploratory thoracotomy. The treatment of tuberculous disease of the mediastinum resolves itself into two phases: first, therapeutic endeavors directed at the primary problem of the tuberculous infection; and, second, therapy designed toward the relief of symptoms arising secondarily as a result of bronchial, vascular, or esophageal obstruction. The treatment is, therefore, both medical and surgical. In some cases, especially in children, bed rest and antimicrobial therapy with streptomycin, *p*-aminosalicylic acid and isoniazid will resolve the inflammatory process and lead to complete subsidence of the clinical condition. Bronchoscopic removal of caseous material may be of great benefit. The sequelae of long-standing progressive compression of the bronchus, such as bronchiectasis and lung abscess, definitely require surgical treatment. Lobectomy or segmental resection are the most common procedures used for secondary suppurative lesions. At operation the enlarged lymph nodes also are removed.

Unilateral and Bilateral Functional Changes Attending Phrenic Crush With and Without Concomitant Pneumoperitoneum. A. A. Siebens, C. F. Storey, M. M. Newman and others. Am. Rev. Tuberc. **71:**676-692 (May) 1955 [New York].

Sixteen men with unilateral pulmonary tuberculosis were studied before and after being treated with phrenic crush, performed either as the sole procedure or in combination with artificial pneumoperitoneum. Functional analyses included preoperative and postoperative measurements of the total lung capacity and its subdivisions, differential bronchospirometry, and the maximum breathing capacity. The volumetric compartments of the single lung were measured in 10 patients in an attempt to add greater precision to the detection of changes in pulmonary midposition. The total and unilateral functional residual capacity fell after phrenic crush in one of the 10 patients who

was given only a phrenic crush; 9 of these patients, 3 of whom had unilateral measurements, showed no change in midposition of the lung in consequence of their operation. On the other hand, the functional residual capacity was reduced in each of seven patients in whom temporary phrenic paralysis was supplemented with pneumoperitoneum. A selective effect on the side of the phrenic crush was shown by the six of these seven patients who had unilateral measurements. The residual volume was infrequently reduced by phrenic crush alone, but commonly decreased in the presence of pneumoperitoneum. Vital capacity, the unilateral contribution to ventilation and oxygen uptake, and the maximum breathing capacity were usually significantly reduced postoperatively. Phrenic crush inflicted a functional loss on all patients. Only in those receiving pneumoperitoneum was a favorable effect on pulmonary midposition shown.

Heparin in Small Doses by Intra-Arterial Route in Treatment of Venous Thrombus Obstructions. M. Butto' and I. Masetto. Riforma med. **79:**346-348 (March 26) 1955 (In Italian) [Naples, Italy].

The intra-arterial administration of small doses of heparin brought improvement to 14 patients with thrombophlebitis and phlebothrombosis secondary to surgical intervention or therapeutic trauma. A dose of 5,000 International units of the drug was injected daily for four or five days into the femoral or humeral artery depending on which extremity was involved. The drug was injected into the radial artery of one patient. Some of the patients received concurrently 500,000 International units of penicillin intramuscularly every six hours. The final results, however, were the same regardless of whether the antibiotic was or not given. The shape, size, and function of the extremity returned to normal four to five days after the treatment was started. Edema and pain disappeared completely after three or four injections; hyperthermia, which was present in most of the patients, disappeared as the phlebitis regressed; and the patients were able to be up and about three or four days after completion of treatment. The mechanism of action of small doses of intra-arterially administered heparin in thrombophlebitis and phlebothrombosis is still obscure. Various factors, some acting on the wall of the vein and others on the hemoplasma imbalance that occurs at the site of the lesion, may be responsible for bringing about the quick improvement. The authors used the intra-arterial route of administration because in this way the drug reaches the impaired area promptly and has a greater effect on the lymphangitic and periphlebitic processes that occur shortly after the onset of the phlebitic episode.

Cholecystic Disease of Pancreatic Origin: Clinical and Experimental Contribution. O. F. Longo. Arch. mal. app. digest. **43:**1121-1153 (Dec.) 1954 (In French) [Paris, France].

The exploration of the extrahepatic and intrahepatic biliary system made possible by operative cholangiography has resulted in a better understanding of hepaticopancreatic physiopathology. The term functional cholecystic disease may be applied to all the diseases of the extrahepatic biliary passages that have the gallbladder as their central point. Lesions of the gallbladder are closely connected with infection and biliary stasis often plays a contributory part in the development of cholecystic disease. Disturbances of lipid metabolism and the reflux of pancreatic ferments have also been recognized as frequent causes of conditions affecting the extrahepatic biliary system. Dystonia of the pancreatic duct may be demonstrated on radiological examination and should be considered in the planning of operative treatment. Less importance is attached to the possibility of reflux through the accessory pancreatic duct, although that duct is known to carry significant quantities of pancreatic juice. The reaction of the gallbladder to the reflux of pancreatic enzymes may appear in any of three different forms: (1) dissecting and exfoliative cholecystitis with its severe local lesions; (2) cholecystitis sine concrementio, in which the changes are less pronounced but serious sphincteric disturbances are present; and (3) biliary peritonitis without perforation, which has grave repercussions on the general condition, although the local lesions are less significant than those of the exfoliative form. The gallbladder may or may not be visible on radiological examination. When it cannot be seen, grave parietal changes are usually present. Radiological opacification of a gallbladder without calculi, however, does not necessarily mean that it is histologically sound, and this fact lessens the value of cholecystography as a method of diagnosis in noncalculous cholecystitis. Operative cholangiography is a valuable aid in the study of the biliary and pancreatic systems, but it cannot be used in patients with biliary peritonitis without perforation because of the danger of reflux into the pancreatic duct; it may have been responsible for the death of one such patient. Strict medical treatment should be tried in patients with noncalculous cholecystitis. If this fails, cholecystectomy is indicated. Patients with the exfoliative form of the disease are often operated on with a mistaken diagnosis of calculous cholecystitis or empyema of the gallbladder. Discovery at operation in such cases of hepaticopancreatic dystonia with an absence of stones warrants closure without biliary drainage; a small drain, however, should be left in place for 48 to 72 hours. Cholecystostomy, rather than cholecystectomy, is advocated for the treatment of biliary peritonitis without perforation, which apparently represents the final stage of cholecystic disease of pancreatic origin.

Value of the Treponema Immobilization Test in the Study of Familial Syphilis. G. Tramier and J. Ranque. Presse méd. **63:**515-518 (April 6) 1955 (In French) [Paris, France].

The treponema immobilization test provides the best method of detecting antitreponemic antibodies circulating in the blood. The presence of these specific immobilizing antibodies in the serum, however, must be interpreted according to the facts in each case; it may be either an indication of latent syphilis capable of reactivation or an evidence of past infection. The finding of a positive response to the test in patients who have been inadequately treated for syphilis or who have no known history of syphilitic infection implies the existence of latent disease requiring treatment. Negativation of the response after treatment, however, should not be expected, because the immobilizing antibodies tend to persist in the blood. The great sensitivity and high specificity of the immobilization test often make it possible to obtain positive findings in cases in which other serologic tests prove negative. Specific treatment can then be instituted, providing the patient with a desirable margin of safety. Negative responses, too, are valuable because they tend to eliminate the diagnosis of syphilis in doubtful cases. Spontaneous extinction of the disease is sometimes found in familial syphilis; consequently, the negative responses occasionally obtained in patients known to have had syphilis 15 or 20 years earlier should not be taken as false negatives. Results that seem to be discordant may also be obtained when the infection is in the process of becoming extinct, because production of the immobilizing antibodies is then irregular. The fact that latent syphilis can be detected by the treponema immobilization test makes familial syphilis, with the many diagnostic problems it presents, an especially fruitful field for investigation by this means. A history of repeated unexplained obstetrical accidents should likewise be taken as an indication for the test, because by it the women in whom such accidents are due to syphilis can be distinguished from those in whom other undetected causes, e. g., gynecologic lesions, diabetes, hormonal disturbances, toxemia of pregnancy, and Rh sensitization, are responsible. Experience shows that the treponema immobilization test, applied under the conditions described, is an invaluable guide in the diagnosis and treatment of syphilis.

Clinical Significance of Rising Incidence of Infections Due to Gram-Negative Bacilli. E. M. Yow. Postgrad. Med. **17:**413-419 (May) 1955 [Minneapolis].

Because of the ability of gram-negative bacilli to adapt more readily to growth in the presence of antimicrobic substances, they have become relatively more frequent as factors in the causation of disease. This increase is due largely to the effective control of most infections caused by gram-positive organisms, though in some cases infections have developed as the result of the suppression of normal bacterial antagonists by antibiotic therapy. Infections caused by Escherichia coli and Aerobacter aerogenes,

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Proteus, and Pseudomonas groups are more likely to be observed if antibiotics are administered prophylactically for long periods or at frequent intervals, or if combinations or single antibiotics with extremely broad spectrums are given. Patients are particularly susceptible to these relatively nonpathogenic organisms if there is some basic alteration in their ability to withstand the invasion of infectious agents. The most common infections caused by gram-negative bacilli are the infections of the genitourinary and intestinal tracts and their complications. Other infections rarely observed previously, such as pneumonia, meningitis, bacteremias, and wound infections, are seen more frequently. The establishment of precise diagnoses and the careful planning of specific antibiotic therapy are important factors in preventing and correcting these infections. Antibiotic sensitivity tests are most important because of the strain variation in sensitivity of this group of organisms. In minor infections caused by gram-negative bacilli, sulfonamides in adequate doses are often sufficient to control the infection. In more severe infections, large doses of streptomycin combined with one of the tetracyclines or chloramphenicol should be administered until antibiotic sensitivity tests are performed. In infections caused by gram-negative bacilli it is especially important to correct any underlying anatomic and immunologic disorders.

Musculoskeletal Chest Pain Following Myocardial Infarction. W. L. J. Edwards. Am. Heart J. **49:**713-718 (May) 1955 [St. Louis].

Musculoskeletal chest pain was observed in 8 of 60 patients with acute or old myocardial infarction. One patient had pain in the shoulder and hand in addition; two other patients had the shoulder-hand syndrome without chest pain. The chest pain appeared within the first two weeks following myocardial infarction in six of the eight patients, three months later in one, and six months later in the other. The pain was located in the left precordium in six patients and spread to the entire anterior chest wall in two patients. The postinfarction pain was located in the same area as the pain of the acute infarction in one-half of the patients. The onset of pain was gradual, and its duration varied from 30 minutes to several days, usually about one to two hours. It was most often described by the patient as a steady, dull, aching, or pressing pain. The intensity of the pain was usually mild to moderate. In two patients it was so severe that opiates were required. The episodes of pain recurred intermittently for periods varying from one month to three years. Six of the eight patients were found to have localized areas of muscle tenderness within the area of the pain; however, the spontaneous pain was not reproduced by pressure. Reproduction of the spontaneous pain was accomplished in all but one patient either by raising the arms high over the head or by twisting the body. Other sources of skeletal pain were sought in all of these patients. One had rheumatoid arthritis of the hands and spine with superimposed osteoarthritis in the cervical spine, leading to intermittent pain in the back of the neck. This patient had both anterior chest and posterior neck pain simultaneously. Three of the eight patients had angina pectoris after myocardial infarction. Two of them were unable to differentiate the attacks of angina from the skeletal chest pain until after the exercise test separated the short-lived anginal pain from the prolonged skeletal pain. Another noted that his skeletal pain became much more severe during periods of increasingly frequent attacks of nocturnal angina. Although the mechanism of the pain is unknown, it seems likely that afferent impulses from the heart "sensitize" a localized musculoskeletal disorder in the somatic reference area of cardiac pain.

Patients with Healed Myocardial Infarction Should Work. W. D. Stroud. Geriatrics **10:**184-188 (April) 1955 [Minneapolis].

Stroud cites case histories to illustrate that patients who return to work live for many years with healed myocardial infarcts. He feels that physicians are at fault when they do not explain to each patient with a myocardial infarct that, after recovery from acute episode, the condition for which restrictions were ordered no longer exists. Often these patients cannot return to work, because they have fallen out of the routine or habit of work. The functional capacity of the heart is the real criterion of the degree of incapacitation. It has been postulated that increased blood pressure from physical activity will rupture capillaries in atheromatous plaques lining the intima of the coronary arteries, thus leading to thrombus formation. There is little to support such a hypothesis. Emotional stresses are unavoidable, and apparently the adrenals under stress of emotion produce in the blood stream an amount of epinephrine equal to that produced with physical effort. Patients with healed myocardial infarcts following coronary occlusions should be urged to return to work.

Pulmonary Embolism. P. Gundersen. Nord. med. **53:**565-568 (April 7) 1955 (In Norwegian) [Stockholm, Sweden].

The diagnosis of pulmonary embolism was made clinically and pathoanatomically in 119 out of 10,525 patients treated in department 8 of Ullevål Hospital from 1949 through 1954. The highest incidence was in the 60 to 79-year-old age group. The symptoms often have the character of a febrile pulmonary disease, frequently with recurring fever, now and then with transient symptoms of shock or precordial pain, and not seldom with transient electrocardiographic changes of varying type. Symptoms of heart insufficiency often develop during the course. Fever in patients with heart insufficiency may be a symptom of pulmonary embolism. Attention is called to the lack of response to antibiotics in pulmonary embolism. When in older patients with febrile pulmonary affection antibiotic treatment for a few days is without effect, treatment with anticoagulants should be instituted with suspicion directed toward the possibility of pulmonary embolism. Patients treated for cardiac insufficiency should more often than is usually the case be given anticoagulant treatment. It is suggested that thromboembolic complications may threaten older patients with unconsciousness after intoxication, and treatment with anticoagulants should be applied in the first period of convalescence.

Pheochromocytoma: Two Case Reports with Unusual Reactions and a General Review. C. F. Wingo, J. P. Williams and F. A. Wade. Ann. Int. Med. **42:**856-872 (April) 1955 [Lancaster, Pa.].

Two cases of pheochromocytoma are reported in a 31-year-old and a 33-year-old man who had paroxysmal attacks of headache and hypertension. Several tests were performed to aid the establishment of the diagnosis. In the first patient episodes of hypertension and headache were produced by sleep, amobarbital (Amytal) sodium sedation, orthostatic hypotension, pressure to the right flank, and intravenously given histamine, piperoxan (933 F) and phentolamine (Regitine) hydrochloride. Attacks occurring during sleep, during amobarbital sedation, and after the patient had been standing perfectly still were most likely responses of the tumor to slight reductions of blood pressure, even though these were not recorded. In each instance, blood pressure is normally lowered slightly. Intravenously given histamine lowered the blood presure for a short period before the onset of hypertension. Again, hypertension resulted from reduction of blood pressure or from direct stimulation of the tumor or both. Even though piperoxan and phentolamine were given when blood presure was only slightly elevated, a definite hypotensive phase preceded the onset of hypertension. Hypertension probably resulted from the outpouring of large amounts of pressor amines, which counteracted the adrenolytic action of the drugs. In each test it appears that the patient's hypertensive responses resulted from stimulation of the tumor by reduction of blood pressure. The tumor was removed surgically from the left adrenal gland. Four years have elapsed since operation and the patient is entirely asymptomatic. In the second patient, paroxysms of hypertension and symptoms were produced by hyperventilation, amobarbital sedation, intravenously given histamine and intravenously given tetraethylammonium chloride. The histamine test was done on four occasions; however, a definite hypertensive response was obtained only twice. Piperoxan given during a period of hypertension reduced the blood pressure to normal. During the amobarbital sedation test a slight reduction of blood pressure was recorded before the onset of hypertension. To the authors' knowledge,

no cases have been reported in which paroxysmal hypertension occurred during the amobarbital sedation test. The tumor was removed surgically from the right adrenal gland, and the patient when examined six weeks postoperatively was asymptomatic and his blood pressure was normal on repeated examinations. The common denominator for the production of hypertensive responses in many of the test situations, whether produced by drugs or by other manipulations in patients with pheochromocytomas, appears to be an initial reduction in blood pressure. Surgical treatment of patients with pheochromocytomas should be carefully planned by the internist, surgeon, and anesthesiologist. Uncontrollable hypertension during operation has not infrequently caused death; this can be prevented by having piperoxan or phentolamine available, or possibly by giving N,N-dibenzyl-beta-chloroethylamine (Dibenamine) before surgical intervention. Dilute solutions of norepinephrine, epinephrine, or phenylephrine (Neosynephrine) hydrochloride should be on hand to control severe hypotension following the removal of the tumor.

Evaluation of Isoniazid in Pharmacological Treatment of Recent Postprimary Pulmonary Tuberculosis. M. Zollo and P. Pandolfelli. Gior. med. mil. **105:**15-36 (Jan.-Feb.) 1955 (In Italian) [Rome, Italy].

The authors evaluate the action of isoniazid in the treatment of postprimary pulmonary tuberculosis of recent onset on the basis of their clinical and radiological results in 230 patients treated during the last two years. The drug influences favorably the course of the specific pulmonary process. However, a progressive bacterial resistance to the drug begins to appear, as a rule, after three to four months of therapy. Isoniazid can be used alone for patients with circumscribed, noncavitary forms of the disease—exudative or productive—of recent onset and for patients in whom there is proved bacterial resistance to streptomycin. Patients with other forms of noncavitary tuberculosis should be given the drug combined with streptomycin. Patients with cavitary forms should always be given the drug combined with antibiotics regardless of whether a complete recovery is expected with the therapy or whether a pneumothorax or any other surgical intervention will be necessary. The most useful combination in the authors' experience was with streptomycin, and they feel that this should be the standard therapy for most forms of postprimary pulmonary tuberculosis of recent onset. Rarely does isoniazid, however, even when combined with streptomycin bring about complete healing of cavitary forms even if they are of recent onset, and, therefore, although this combined therapy is extremely useful in the initial phase of the cavitary forms, most of the time it is only a valuable means of preparing the patient for collapse therapy. Just the same, the authors feel that it is justified to institute this therapy in all cases of recent postprimary cavitary pulmonary tuberculosis because the combination may prove extremely useful.

Function Test of Pancreas. B. Steinmann and J. Widmer. Schweiz. med. Wchnschr. **85:**411-416 (April 30) 1955 (In German) [Basel, Switzerland].

The response of the serum diastase levels of 125 patients with various diseases and of 10 normal control persons to stimulation of the pancreas with neostigmine methylsulfate according to the technique by the Americans Knight and Muether (*J. A. M. A.* **140:**984 [July 16] 1949) was studied by the authors at the Insel Hospital in Bern, Switzerland. The serum diastase values were determined with the aid of Somogyi's saccharogenous method. The fasting diastase values in the normal control persons were between 60 and 180 units. Elevated values were found in patients with acute pancreatitis and in patients with cholelithiasis associated with uremia. Abnormally low fasting diastase values were found in single patients with various disorders, and the lowest values were observed in patients with diseases of the liver shortly before death. In normal persons the neostigmine test showed only slight variations in the diastase values up to a maximum of 25 units, and these findings corresponded with those of Muether and co-workers. The response of the serum diastase levels to stimulation of the pancreas with neostigmine was evaluated as definitely abnormal when the difference between the maximum elevation or lowering of the serum diastase above or below the fasting value was at least 35 units. Abnormal curves were observed most frequently in patients with acute and chronic pancreatitis, obstructive jaundice, cholelithiasis (mostly elicited by colic) and cirrhosis of the liver. Abnormal serum diastase values also were found in patients with various abdominal disorders, bronchial asthma during the free interval between attacks, diabetes mellitus, and multiple sclerosis. The neostigmine test reveals only a functional disturbance of the pancreas but does not provide direct evidence of basic morphological alteration. A positive response to the test, therefore, does not prove the presence of pancreatitis but only that of a disturbance of diastase secretion.

Christmas Disease: Report of a Family. J. M. Lavelle. Irish J. M. Sc. **6:**176-182 (April) 1955 [Dublin, Ireland].

Two kinds of hemophilia have been recognized, the blood of persons with one being capable of correcting the defect in persons with the other. Patients with true hemophilia have a deficiency of the antihemophilic globulin in their plasma; the factor deficient in the other group has been designated as the "plasma thromboplastin component," or the "Christmas factor," Christmas being the name of the first patient in whom this disorder was thoroughly studied. It appears that about 15% of cases formerly recognized as hemophilia are cases of Christmas disease. The latter term is preferred because it is noncommittal and less confusing. Lavelle studied the coagulation in four children of one family of whom the first three were males and the fourth a female. At the time of this study their ages ranged between 27 and 18 years. Two of the men with a hemorrhagic history had deficiency of serum thromboplastin generation activity. One of these had a mild form of Christmas disease, with a slightly raised clotting time; he had the most severe clinical disability of the four. His consumption of prothrombin to form thrombin was normal in his serum one hour after clotting. The second, who did not consider his hemorrhagic history of any import, had a clotting time within normal limits, but his conversion of prothrombin to thrombin was greatly decreased. He also seems to have Christmas disease. Reliance on prolonged clotting time and decreased prothrombin utilization during clotting, alone, would have been misleading in the diagnosis of these cases. The third male had no hemorrhagic history, and his serum was normal in its capacity to produce thromboplastin. The power of his blood to produce thromboplastin, however, is much less than that of a control blood. The 18-year-old sister of these three brothers showed poor activity of the serum in producing thromboplastin. The most effective technique for diagnosis of Christmas disease is the thromboplastin generation test.

Epidemic of Infectious Hepatitis: Some Notes on Delineation of High-Risk Groups and Protection of Exposed Susceptibles by Gamma Globulin. J. A. Barondess, M. E. Drake, W. J. Bashe Jr., and others. A. M. A. Arch. Int. Med. **95:**633-645 (May) 1955 [Chicago].

This paper is concerned with an epidemic outbreak of infectious hepatitis that occurred between June, 1951, and September, 1952, in an urban and rural population of Dalton and Whitfield County, Georgia. Physicians in this area were asked to report all cases of infectious hepatitis to the health department by card or telephone. The patients were then visited by a physician-epidemiologist or a nurse-epidemiologist, and detailed data were collected on a prepared form. These included onset date; symptoms and signs; history of injections within six months; antecedent, coincident, or subsequent cases in the family or environment; animal and insect contacts; food, water, milk, and ice cream supplies; and school or occupation. Data were analyzed from these forms. The 335 reported cases occurred in 260 families. A striking selection of the younger age group was noted, and spread appeared to have occurred by person-to-person contact. The incubation period was usually between 30 and 33 days. A high secondary attack rate in families was noted, and over 64% of the cases occurred in school children. The possibility that the outbreak might have originated in a chronic fecal carrier of the virus was considered and explored, although this person could not be associated definitely with the genesis of the epidemic.

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Gamma globulin afforded a high degree of protection of exposed susceptible persons under field conditions when administered in doses approximating 0.01 cc. per pound of body weight more than seven days before the appearance of symptoms. It would seem that in future epidemics efforts at control should proceed from these facts and that gamma globulin should be administered to persons in high-risk groups, namely, to school and family contacts of patients. It is quite likely that a significant degree of control could be achieved even if administration of the material were restricted to persons under the age of 20. Prior studies had indicated that special attention should also be given to the protection of pregnant and postmenopausal women.

Three Cases of Agammaglobulinemia: Clinical, Genetic, and Physicochemical Contribution to Knowledge of Protein Metabolism. N. Kulneff, K. O. Pedersen and J. Waldenström. Schweiz. med. Wchnschr. **85**:363-367 (April 16) 1955 (In German) [Basel, Switzerland].

Two brothers, aged 10 and 7 years, and a 6-year-old boy whose relationship with the two other boys could not be proved definitely, although it could be assumed, showed a particular susceptibility to infectious diseases. The parents of the 6-year-old boy were first cousins. Electrophoretic studies revealed a complete absence of gamma globulins in the serums of all three patients as the cause of this susceptibility, while a deficiency in this globulin fraction was not found in the serum of other members of the family. Ultracentrifugation curves showed the complete absence of the component of serum proteins with the sedimentation constant of 7S, which under normal conditions parallels the gamma globulin fraction. The disease is considered a hereditary chemical malformation, with loss of synthesis of gamma globulins and of the 7S-component of the serum proteins.

Lytic Preparation in Treatment of Chronic Obliterative Arteriopathies. G. D'Ancona. Minerva chir. **10**:120-128 (Feb. 15) 1955 (In Italian) [Turin, Italy].

The treatment of chronic arterial disease of the lower extremities by means of a lytic preparation gave good results in 10 patients. Patients with cardiac insufficiency and cerebral arteriosclerosis in whom the use of ganglioplegics is contraindicated were excluded from the study. The patients treated were in the most diverse stages of the disease and extensive necrosis was present in many. The lytic preparation was the combination of 4 cc. of "Dolisina," a narcotic; 2 cc. of "Esonium," hexamethonium; 2 cc. of "Regitin," a sympathicolytic agent; and 2 cc. of "Antistin," antazoline. The treatment was continued for from a minimum of 30 to a maximum of 70 days with daily doses of 2 cc. of the preparation at first in two, later in a greater number of divided doses. The symptoms abated and the oscillometric value improved greatly in the patients in whom the disease was in the initial phase. In patients with extensive gangrene the treatment influenced favorably the demarcation of the necrosis—in one patient this was followed by spontaneous amputation of the third toe of the left foot—and conservative interventions, such as digital disarticulation, could be carried out. In two patients in whom the disease dated back three and four years, periarterial sympathectomy of the femoral and humeral artery was performed. The main beneficial effect of this therapy was on the pain, which disappeared or decreased markedly in all the patients permanently. In only one of them did pain reappear, and this occurred one month after the suspension of the therapy. In most of the patients the oscillometric values were improved.

Cross-Infection of Wounds with Antibiotic-Resistant Organisms. E. J. L. Lowbury. Brit. M. J. **1**:985-990 (April 23) 1955 [London, England].

According to Lowbury, prevention of the emergence of antibiotic-resistant organisms, especially micrococci (staphylococci) causing added infections of wounds in hospital patients, and prevention of the transfer of resistant strains from the environment to the patient are the two basic problems in the control of cross infection of wounds. To combat the emergence of antibiotic-resistant organisms, efficient dosage and a combination of two or more agents has been advocated. Preliminary trials of local application, first of neomycin for three months, and then of 1:6-di-4'-chlorophenyl-diguanidohexane (Hibitane) for four months were carried out in patients who had burns of less than 20% body area, were not given skin grafts on admission, and were regarded as suitable for treatment by the closed method. Control patients received local applications of penicillin cream. Whereas 18 of 30 (60%) burns treated with the control penicillin cream became infected with Micrococcus pyogenes aureus during the first 14 days after admission, only 5 of 33 (15%) of the burns treated locally with neomycin and penicillin became infected with the organism in that period. Of 33 burns treated with penicillin cream, 28 (85%) became infected with Micrococcus aureus during the first 14 days after admission; by contrast, only 6 (21%) of the 29 burns treated with Hibitane cream became infected with the organism. None of the micrococci isolated from burns during this time were resistant to neomycin or Hibitane. The local application of these two agents thus had some prophylactic effect against micrococci in burns, so far not accompanied by the emergence of any resistant strains, but three or four months of prophylactic trial is too short a time to justify any confidence that resistant strains may not turn up later. Methods to control the spread of bacteria by air and by contact have been considerably developed in recent years, but more knowledge of their performance is needed. A controlled trial of the air-conditioned dressing station was carried out in the author's Burns Unit in the Accident Hospital in Birmingham, England. A significantly smaller proportion of burns dressed in the ventilated room acquired Pseudomonas pyocyanea, Proteus, and antibiotic-resistant micrococci than were acquired by the burns treated in the room with the ventilators switched off. A significantly higher proportion of Micrococcus pyogenes aureus resistant to chlortetracycline (Aureomycin) and penicillin and showing the "hospital strain" phage patterns (group III) were found in the nares of patients dressed in the room with the air-conditioning plant switched off. The benefits of air-conditioning with filters, like those of the no-touch technique and other physical methods, cannot be lost through the emergence of resistant mutants. This trial showed that the frequency of cross infection could be reduced by changing the dressings, not in the ward, but in a special room ventilated by filtered air under positive pressure. For the more complex task of limiting the transfer of infection in the ward, many changes in hospital design and in nursing routine require investigation.

Pathogenic Staphylococci in the Environment of the Newborn Infant. P. N. Edmunds, T. F. Elias-Jones, J. O. Forfar and C. L. Balf. Brit. M. J. **1**:990-994 (April 23) 1955 [London, England].

Six hundred eight vaginal swabs and 701 nasal swabs taken on admission from 770 mothers in three hospital maternity units of different types in Edinburgh, Scotland, and 44 nasal and 44 vaginal swabs from mothers confined at home were examined for the presence of pathogenic micrococci (staphylococci), and their sensitivity to four antibiotics and to a sulfathiazole derivative was determined. Specimens taken from 774 babies delivered by these mothers included 683 conjunctival and 639 umbilical swabs. Two hundred forty-five nasal swabs from the medical, nursing, and domestic staff attending mothers and babies during the period of the authors' survey were examined. In order to ascertain whether mothers acquired pathogenic micrococci while in hospital, 293 nasal and 297 vaginal swabs were taken about eight days after admission in addition to those taken on admission. Over 51% of the members of the nursing, medical and domestic staff in the three maternity hospitals were found to be carrying Micrococcus pyogenes aureus in their anterior nares. Of these micrococci, 58% were completely resistant to penicillin and nearly 20% were resistant to the sulfathiazole derivative. Less than 10% were resistant to chloramphenicol (Chloromycetin), chlortetracycline (Aureomycin), and streptomycin. The micrococcic carriage rates of the mothers admitted to and of the babies delivered in the three maternity units were determined. The mothers' vaginal carriage rate was 3.5%, and their nasal carriage rate was 28.7%. Of these, only the vaginal carriage rate rose during an eight-day period. The babies' eye carriage rate on the fourth day after delivery was 35.3%, and the umbilical carriage rate on the eighth day was 40.1%. The corresponding carriage rates for babies born at home were 5% and 8.6%. As

between three different maternity units of different type there was little difference in the mothers', babies', and staff carriage rates. There was a much higher incidence of penicillin-resistant strains among nurses and babies than among mothers, and among week-old babies born in hospital than among those born at home. Individual hospitals showed little difference in antibiotic-resistance rates. A relatively high frequency of mild skin and conjunctival sepsis contrasted with a complete absence of serious infection in the babies. Most infants acquired their micrococci from sources other than their mothers, chiefly from the nursing staff and from other babies. Despite the fact that there was a high carriage rate among the nurses attending babies born at home the carriage rate among these babies remained low. Where infants carried micrococci on two different sites (eye and umbilicus), in about 50% of the cases the micrococci had different drug-sensitivity patterns.

Opium Intoxication Treated with Lethidrone (N-Allynormorphine Hydrobromide). K. Kvalvik. Tidsskr. norske lægefor. **75:** 242 (April 1) 1955 [Oslo, Norway].

A man, aged 50, had taken 20 to 30 gm. of tincture of opium. On admission his condition was marked by deep coma, cyanosis, miosis, and respiratory disturbances, and he appeared to be moribund. Dramatic improvement set in within half a minute after intravenous injection of 15 mg. of Lethidrone. An additional injection of 10 mg. was given in the next two minutes. Respiration was then normal, the pulse rate fell, and the blood pressure rose. Miosis persisted. The patient regained consciousness in three and a half hours.

Thyroxine Therapy in Preventive Geriatrics. P. Starr. J. Am. Geriatrics Soc. **3:**217-225 (April) 1955 [Baltimore].

In 28 patients without evidence of thyroid disease, who were 75 years of age or more, the mean value for the concentration of protein-bound (circulating thyroxin) iodine in the serum was 5.2 mcg. per 100 cc. The normal control value for young adults was 5.57 mcg. per 100 cc. The evidence derived from these determinations as well as from thyroidal uptake of radioactive iodine suggests that health in the later years of human life depends, among other things, on maintenance of the same concentration of thyroxin in the tissues as is needed for health in young adults. The maintenance dose of thyroxin necessary for health in the extremely aged would seem to be of the same order of magnitude as that necessary for the maintenance of hypothyroid patients in middle life. A 97-year-old woman is reported on who has been receiving thyroid medication for 60 years, i. e., since the time when she was 37 years old; the dose requirement in this athyreotic patient did not decrease significantly in the course of this period. It seems highly probable, although not exclusively demonstrated, that atherosclerosis and other degenerative diseases may be associated with hypothyroidism, with the result that life is shortened. Certain possible discrepancies between the basal metabolic rate which was commonly believed to represent the level of a patient's thyroid function, and the clinical condition should be kept in mind when appraising thyroid function. The basal metabolic rate is probably low in some old people, but whether these people are healthy or not remains to be determined; their lower rate of oxygen consumption may be caused by lessened somatic muscle mass or other similar factors. Subclinical hypothyroidism may be detected by the determination of the concentration of protein-bound iodine (circulating thyroxin) in the serum. Maintenance of adequate circulation of thyroxin to the tissues for extended periods may be obtained by the oral ingestion of sodium levo-thyroxin. The author concludes that old people are not normally hypothyroid, and middle-aged people should not be allowed to become hypothyroid.

Steroid Diabetes. A. A. Polachek. Maryland M. J. **4:**195-199 (April) 1955 [Baltimore].

Signs of acute diabetes mellitus without acetonuria developed in a Negro man, aged 34, while he received cortisone therapy for generalized sarcoidosis. The symptoms of diabetes disappeared rapidly on cessation of treatment with cortisone, the hyperglycemia in 4 days, and the glycosuria in 12 days. The glucose tolerance curve remained abnormal for three weeks, but reverted to normal at five weeks. This patient, without any known family history of diabetes and without latent diabetes, acquired frank steroid diabetes on 50 mg. of cortisone per day, after more than five weeks of therapy. Well over 100 patients were treated at the same hospital with corticotropin or cortisone, but this was the only case in which diabetes developed. In view of the frequency of diabetes in Cushing's syndrome (adrenal-cortical hyperfunction) and the demonstrated effects of corticotropin and cortisone on carbohydrate metabolism, it is interesting to consider the reasons for the rarity of steroid diabetes in normal persons, in addition to its more frequent occurrence with corticotropin as compared to cortisone. Many observers consider the normal pancreatic islet reserves as the most important compensatory mechanism, with insulin secretion varying directly with adrenal-cortical activity. This idea may derive some support from patients without an islet reserve, namely, those with Addison's disease and diabetes, who develop very intense diabetogenic effects with cortisone. The decreased incidence of diabetes with cortisone, as compared to corticotropin may be explained by its suppression of corticotropin elaboration, with resulting fall in endogenous adrenal hormone. Other factors that may enter are the comparative dosage of corticotropin and cortisone, as well as the probable production of hydrocortisone and perhaps other adrenal hormones, rather than cortisone, by corticotropin therapy.

SURGERY

Some Aspects of Mitral Commissurotomy. J. A. Gravel. Laval méd. **20:**443-452 (April) 1955 (In French) [Quebec, Canada].

Two men, aged 36 and 25 years, were subjected to mitral commissurotomy as an emergency procedure. The older patient was admitted to hospital with severe pain in his right lower extremity. The extremity was cold and the pulse was imperceptible in the foot and in the popliteal space. History revealed that three months previously he had been admitted to another hospital with the same symptoms in the left leg, which was then amputated. From time to time he had had hemoptysis and dyspnea on effort. He had never shown signs of cardiac decompensation. A diagnosis of embolism in the right leg was made, and the patient was given heparin. Examination of the heart revealed mitral stenosis associated with auricular fibrillation confirmed by electrocardiogram and roentgenograms. After five days the condition of the lower extremity was improved, and digital commissurotomy was performed. The postoperative course was uneventful but an eschar occurred at the right ankle. One month after the commissurotomy, exploration of the femoral artery was done and an old thrombus was removed. Six months after the commissurotomy the electrocardiogram still showed fibrillation, but the size of the heart had decreased considerably and the patient felt well, was able to mount stairs without dyspnea, and could sleep with one pillow. Commissurotomy saved the patient from losing his second leg. The second patient was admitted to the hospital with a suspected pulmonary abscess and with pronounced hemoptysis. The patient had dyspnea on the slightest effort, and the red blood cell count revealed only 2,820,000 per cubic millimeter. A diagnosis of mitral stenosis was made on examination of the heart. He was given blood transfusions and digitalis, but hemoptysis continued and the commissurotomy was performed despite the patient's unfavorable condition. The highly calcified and contracted valve made the use of the knife indispensable. The postoperative course was uneventful. Hemoptysis ceased suddenly, and three months later the patient had mild dyspnea on effort only. If the diagnosis of mitral stenosis had been made earlier, the patient could have been operated on under more favorable circumstances, but despite his poor condition the operation was successful. Emergency mitral commissurotomy did not only prolong the lives of these two patients, but in fact saved their lives. There are two indications for emergency commissurotomy in patients with mitral stenosis, namely, simple or repeated embolism and single or multiple hemoptysis. One should not wait for them to appear before performing mitral commissurotomy.

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Nodular Goiter and Carcinoma of the Thyroid. E. Todd Jr. J. Kentucky M. A. **53**:316-319 (April) 1955 [Louisville, Ky.].

Of 269 patients with a clinical diagnosis of nodular goiter who were admitted to the Lexington Clinic in Lexington, Ky., between July, 1948, and January, 1954, 158 (59%) were operated on. Fifty-eight of the 158 patients had toxic nodular goiter. Seventy-five patients had single adenoma, and 83 had multiple nodules. Eleven of the 158 patients operated on for nodular goiter had carcinoma of the thyroid as revealed by microscopic examination. Four of these patients were thought to have carcinoma preoperatively, an incidence of correct diagnosis of 36%. The total incidence of carcinoma among the 269 patients was 4.09%, and the incidence was 6.96% in the 158 patients operated on. Of the 83 patients with multiple adenomas, there were 3 who had carcinoma, an incidence of 3.6% of malignant disease. Two of these three patients had toxic goiters. Of the 75 patients operated on for a solitary adenoma in the thyroid, 8 had carcinoma, an incidence of 10.66% of carcinoma in this group. In none of these cases were there toxic effects. The pathological diagnosis was one of papillary adenocarcinoma in 8 of the 11 patients. All 11 patients are alive six months to five years after surgical treatment, although two patients have had local or regional recurrence, and one other is still alive but with lung metastasis, presumably from the thyroid tumor. Two of the 11 patients had had subtotal thyroidectomy some years previous to the onset of their carcinomatous degeneration; these patients confirm a well-known fact that removal of one or more adenomas does not prevent the later occurrence of others, some of which are malignant. The incidence of malignant disease in solitary nodules is high enough to warrant surgical removal. All children with nodular goiter should be considered to have carcinoma of the thyroid until microscopic examination of the nodule proves that it is not malignant. All patients with a mass in the neck adjacent to the thyroid should have excision biopsy of the lesion and further surgical treatment at that time, if microscopic study of the frozen section proves it to resemble thyroid tissue. Toxicity in multiple nodular goiter does not mean that malignant disease may not be present in one of the adenomas. All multiple nodular goiters should be frequently examined for possible change in size or consistency and appropriate measures taken if such changes occur. Radioactive iodine is of little benefit in the treatment of cancer of the thyroid except in a few isolated special cases.

Hyperparathyroidism. J. N. Henrie, R. M. Nelson and K. B. Castleton. Am. Surgeon **21**:403-418 (April) 1955 [Atlanta, Ga.].

Henrie and associates present the histories of four patients with hyperparathyroidism. The first patient, a woman aged 28, was first seen in the emergency room. She was acutely ill and complaining of severe left flank pain with dysuria, burning and frequency. She appeared 10 to 15 years older than her stated age of 28. The most striking physical findings were the skeletal deformities—severe kyphosis, scoliosis, and chest deformity. There was acute pain on palpation over the left flank and groin region. Intravenous pyelograms showed good function of the right kidney but no excretion on the left. A calcified density was noted at the distal end of the left ureter. A left nephrectomy was done for a large hydronephrotic kidney with a suppurative pyelonephritis and abscess formation. Two weeks after her discharge from the hospital she was readmitted with upper left quadrant pain, nausea, and vomiting. On this occasion a diagnosis of pancreatitis and a nonfunctioning gallbladder was made. Four weeks later she was again admitted, this time for a thrombophlebitis of the left leg. Roentgenograms of the pelvis showed a destructive lesion of the left sacroiliac joint and multiple destructive areas were seen throughout the pelvis and upper end of the left femur. There was marked osteoporosis with multiple cystic areas in both humeri, right ulna, proximal end of the left femur, distal end of the right femur, and the entire right tibia. Laboratory work showed: hematocrit 40 mm., serum calcium 12.5 mg. per 100 cc., serum phosphorus 1.1 mg. per 100 cc., and alkaline phosphatase 15.8 Bodansky units. Urinalysis showed the urine to be loaded with white blood cells and the urine Sulkowitch was 4 plus. The parathyroid adenoma removed at operation measured 3.5 by 3 by 2 cm. and weighed a little over 15 gm. It was brick-orange in color, very soft, and friable. The histological picture was that of a chief cell tumor in which the cells had become acidophilic. Because of the degree of skeletal decalcification, it has been necessary to give her high oral doses of calcium and vitamin D. She performs her own Sulkowitch test at home, thereby helping to regulate her calcium intake and prevent overdosage. Since removal of the adenoma the patient has felt well. The second patient was admitted primarily with renal disease. The third presented with an epulis and bone pain, and the fourth had enchondromatosis with hyperparathyroidism. In any one of these cases the diagnosis could have been suspected earlier had the Sulkowitch test been made. This is a test for urine calcium, which can be made easily and quickly. Hyperparathyroidism is not an uncommon disease and is surgically curable. Clinically there are three types of cases: first, those in which the predominant picture relates to the skeletal system with skeletal deformities, bone pain, pathological fractures, and bone cysts. Second, those in which urinary tract disease is the outstanding feature. This usually occurs in the form of renal or ureteral stones, with or without infection. Third, symptoms due to hypercalcemia itself with muscle weakness, poor muscle tone, anorexia, and constipation. The three types of symptoms may be present either singly or in any combination. Urinary tract manifestations are the most common findings. Skeletal changes are often reversible. It is imperative to make the diagnosis of hyperparathyroidism early, as only in this way can the condition be corrected before severe renal and bone damage occur.

Pulmonary Segmental Resection: Uses and Technic. J. D. Hardy. J. M. A. Alabama **24**:245-248 (April) 1955 [Montgomery, Ala.].

There are essentially 10 pulmonary segments in each lung. In the left lung the apical and posterior segments of the left upper lobe tend to share a common bronchus, but it later divides and these segments can be excised separately. The same is true of the antero-medial basal segments. Each segment has its own segmental bronchus and its own blood supply consisting of one or more arterial and one or more venous components. The apical segment of the right upper lobe has its own artery and its own vein, in addition to its own bronchus. The same is true for the bronchial venous and arterial supply to the other segments throughout both lungs. Only a single segment or two adjacent segments may be involved in a particular disease. To remove the disease process precisely, the exact segmental distribution should be known preoperatively. The identification of the involved segments can be done by routine roentgen examination, bronchoscopic examination, and bronchographic studies. The disease may be further clarified by actual inspection and palpation of the lung at operation. Bronchiestasis and tuberculosis are two of the most frequently observed diseases which offer an opportunity for segmental resection. The tuberculosis may present as a cavity, bronchiectasis, or a solid lesion such as a tuberculoma. One of the most commonly resected portions of the lung is the lingula of the left upper lobe, which is commonly involved by bronchiectasis that may also involve the left lower lobe. Among other lesions that may be resected by segmental resection are isolated pulmonary cysts, hamartomas, metastatic tumor when justified, hemangioma, bronchial adenoma, and other lesions that can be removed locally. Once the segmental bronchus and vessels have been identified and divided, the diseased segment is dissected from adjacent segments. By compressing the denuded surfaces with a warm sponge for a few moments one can stop most of the air leaks and the bleeding from small vessels. The bronchial stump is closed with interrupted silk sutures and is covered with adjacent pleura or other tissue. The author employs suction routinely for the first 24 hours to assist and maintain expansion of the lung. As lobectomy replaced pneumonectomy for lesions that could be excised by lobectomy, so segmental excision is replacing lobectomy for lesions that can be excised by removal of one of these smaller anatomic units. By resecting only the diseased portion of a lobe, the surgeon excises nonfunctioning pulmonary tissue but spares the functioning pulmonary tissue. Segmental excision represents an established and important advance in pulmonary surgery.

Late Results of Operation for Gallstones: Why Does Surgical Intervention Not Cure All Patients with Cholelithiasis? J. M. Wóllesen. Nord. med. **53:**529-532 (March 31) 1955 (In Danish) [Stockholm, Sweden].

After-examination of 221 patients (33 men, 188 women) from 1 to 13 years after operation for gallstone disorders showed 197 to be well. Of the 27 not cured 26 were women. The patient's age at operation and the duration of the disorder before operation did not affect the late result. Four patients were found to have duodenal ulcer that may have been latent at the time of operation, and four had overlooked calculi in the deep bile ducts, verified at relaparotomy. In seven there may have been overlooked calculi in the deep bile ducts but reoperation was not done; these patients have now been without symptoms for varying lengths of time. Four patients had chronic constipation, and four had dyspeptic complaints; four additional cases are unexplained. The combination of gallstone disease and duodenal ulcer is frequent, and systematic examination for both disorders must be carried out. Whether or not removal of the gallbladder can be the cause of the disturbances often complained of after operation is a question.

Vagotomy in the Treatment of Peptic Ulcer: With an Analysis of Results in Almost 650 Cases. A. D. Beattie. Canad. M. A. J. **72:**510-513 (April 1) 1955 [Toronto, Canada].

The end-results of vagotomy carried out through an abdominal approach and combined with some associated procedure to prevent the otherwise inevitable retention syndrome were extremely satisfactory in 643 patients with chronic duodenal ulcer operated on by Beattie and followed up carefully for up to eight years. Partial pylorectomy with resection of at least the anterior half of the pyloric sphincter and a subsequent pyloroplasty of the Judd type associated with vagotomy gave excellent results and has been employed routinely over the past six years. Only very rarely has it been necessary to substitute gastroenterostomy in cases in which exceptional fixation of the duodenum or the patient's obesity prevented good access to it. There was only one proved case of recurrent ulceration; it was suspected in three other cases, but in each of these an insulin test meal showed evidence of incomplete neurectomy, and subsequent laparotomy showed the presence of a large intact vagal branch, which had been missed at the original operation. Temporary ileus of the stomach, duodenum and small intestine always occurred after vagotomy and lasted for 72 to 96 hours, but it was rarely severe enough to necessitate gastric suction or prolonged intravenous therapy, and most patients could be started on a rapidly increasing diet within 24 hours of operation. Diarrhea lasting for 10 to 14 days was present, in some degree, in 11.4% of the patients but was never incapacitating. Temporary dysphagia occurred in 15.2% of the patients, within the first three weeks of convalescene. This is probably caused by partial achalasia of the lower esophagus, the result of division of the vagal supply to it. It passed off spontaneously within one or two weeks, and there have never been any undesirable sequelae. Within three months of operation, the whole gastrointestinal tract had apparently settled down completely to normal, save that bowel movements were more regular and softer than before and that 2.8% of the patients suffered from occasional mild flatulence after a heavy meal. Hypoglycemia developed in 8.7% of the patients, though it was only incapacitating to any degree in four patients. The exact mechanism of this symptom complex is still uncertain, but there seems little doubt that it is caused by some upset of glucose metabolism resulting from division of the vagal supply to the liver and pancreas. The symptoms are usually so mild as to pass unremarked by the patient unless he is specifically questioned on them; they diminish rapidly in both frequency and intensity, disappearing completely within two years. Before the patients left the hospital, usually on the 10th to the 12th postoperative day, they were on full, regular meals and they were not restricted thereafter, except that alcohol, condiments, and smoking were limited up to the time of the first postoperative reexamination three months later. The average gain in weight was 12.9 lb. (5.9 kg.) in the first three months and most patients were back at their previous occupations well within this period. No less than 90.6% of the patients were relieved permanently of all symptoms within 10 weeks of the operation; another 5.2% were restored to normal social and economic life three months after vagotomy, though still liable to minor attacks of indigestion or hypoglycemia for an additional 6 to 18 months. Thus only 4.2% of the cases had to be regarded as incomplete successes, due either to subsequent failure to readjust to life or to the persistence of mild gastrointestinal symptoms for more than two years postoperatively. There were three deaths, two of them from early imperfections of technique, and the third from postoperative pneumonia, an over-all mortality rate of 0.47%. It is fair to say that vagotomy has now been shown to be the operation of choice for chronic duodenal ulcer, and to be of considerable value in the treatment of the high, lesser-curvature gastric ulcers provided that these are of relatively small size and not too long established, and for secondary peptic ulcers after inadequate gastrectomy or ill-advised gastroenterostomy. The original enthusiasm with which vagotomy was greeted has proved entirely justified, and its excellent long-term results fully warrant the increasing recognition it is gaining in the surgical treatment of peptic ulcer.

Homogenous Bone Grafts in Spine Fusions for Tuberculosis. S. N. Eichenholtz and V. Mayer. J. Bone & Joint Surg. **37-A:** 317-326 (April) 1955 [Boston].

Sources of autogenous bone frequently are inadequate for patients who require extensive fusions for tuberculosis of the spine. This was found in the 65 cases reviewed by Eichenholtz in whom fusion operations were performed since 1947, and in all of whom at least five years have elapsed since operation. The 65 patients had 84 separate lesions of the vertebral column, involving 169 interspaces. Twenty-five orthopedic surgeons performed a total of 98 primary operations and 93 repairs of pseudarthroses. This seemingly high proportion of repair of pseudarthroses is the result of multiple attempts to obtain solid fusion in the face of persistent failure at a particular interspace in relatively few patients. Pseudarthrosis developed in 36 of the 65 patients considered in this study. The success or failure of fusion has been determined by clinical and roentgenographic examination and by surgical exposure of the fusion area. Exploratory operations were done between 3½ and 10 months after the previous procedure in 101 cases. The extent of fusion to be attempted at any one procedure is dependent upon the condition of the patient, the availability of bone, and the skill of the operating surgeon. The goal is solid fusion of all vertebral bodies involved in the abscess. In 85% of the patients fusion resulted after repair of pseudarthrosis with bank bone. In 44% of these, fusion resulted after the primary procedure. The incidence of pseudarthrosis was greatest in the last three lumbar interspaces. In contrast to this, there was not a single instance of pseudarthrosis involving the interspace between the eighth and ninth thoracic vertebrae in 24 operations at this level. Bank bone may be used in the repair of pseudarthrosis whether autogenous or homogenous bone was used in the primary fusion procedure. Rib was used most frequently, that is, in 70 fusion procedures; it was frequently used in combination with other bones such as the iliac crest, tibia, clavicle, patella, phalanx, femur, fibula, radius, or metacarpal bones. Some of these bones, such as the tibia, were also used alone and with other bones. The incidence of pseudarthrosis was not related to the anatomic source of the bank bone. However, it should be pointed out that bank bone in general rarely consists of much cancellous bone. In contradistinction to this, autogenous bone for use in spine fusion is usually obtained from a source rich in cancellous bone. At the author's hospital the impression has been gained that cancellous bone is superior to cortical bone for use in the Hibbs spine fusion. In a comparison of the value of homogenous and autogenous bone, the source of the bone in terms of its cancellous content must be considered before an adequate evaluation can be made.

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Use of Radio-Active Phosphorus (P^{32}) to Determine the Viability of the Head of the Femur. H. B. Boyd and R. A. Calandruccio. J. Bone & Joint Surg. **37-A:**260-269 (April) 1955 [Boston].

Boyd and associates investigated whether radioactive phosphorus (P^{32}) could be used to predict the viability of the head of the femur at the time of acute fracture. After preliminary studies on dogs, clinical data were obtained on 53 patients including 32 with acute fractures of the femoral neck, 10 with trochanteric fractures, 10 with old fractures, and one with traumatic dislocation of the hip. Since avascular necrosis does not develop in patients with trochanteric fractures, counting rates were recorded in these patients in order to ascertain the relatively normal trochanter-to-head ratio of radioactivity. It was found that the degree of radioactivity of bone after the intravenous injection of P^{32} is not entirely a measure of blood supply of the bone. The injected P^{32}, in the form of a buffered phosphate solution, readily diffuses into the interstitial fluid and is distributed in the various body compartments proportionally to the phosphorus occurring naturally (P^{31}). The amount of P^{32} in the bone depends upon many factors, such as (1) the amount of P^{32} in the blood, (2) the amount of diffusion of the P^{32} into the interstitial fluid, (3) the amount of exchange of interstitial P^{32} and P^{31} on the surface of the bone crystals, and (4) the amount of P^{32} incorporated into bone by metabolism. Therefore, the concentration of P^{32} in bone may vary with any of these factors and is not strictly a measure of circulation. In a matter of seconds after the intravenous injection of P^{32}, there is radioactivity in bone. The relatively high concentration of P^{32} shortly after injection suggests a surface ionic exchange rather than an enzymatic or metabolic process. At one and a half hours after injection there probably is an equilibrium established as to the amount of P^{32} and P^{31} on the surface of the bone crystals. The trochanter-to-head ratios of radioactivity of the 32 patients with acute fractures of the femoral neck ranged from 1.3 to 16.7. Experience has shown that in approximately one-third of the patients with complete fractures of the neck of the femur followed for more than one year avascular necrosis develops. Therefore, in the 10 patients, approximately one-third of this series, with the highest ratios—that is, 4.1 to 16.7—the prognosis would probably be poor. These ratios compare favorably with the ratios of 5.6 to 17.5 obtained in patients with known avascular necrosis. In the patients with trochanteric fractures, the ratios were 0.7 to 1.9; therefore, in the 12 patients with ratios of 1.3 to 2.3, the prognosis would probably be good. No prediction can be made at this time concerning the 10 patients with ratios of 2.5 to 3.9. In pursuing this investigation, the authors encountered a number of interesting problems that stimulate further study. Time may reveal that this method is of no value; however, it presents a new approach to an old challenge. The authors hope that this paper will encourage others to carry out similar projects so that a sufficiently large series of patients can be followed over a significant period of time in order to prove or disprove the value of this procedure.

Molten Plastic Injuries of the Hand (Report of Two Cases). J. M. Baker. Plast. & Reconstruct. Surg. **15:**233-240 (March) 1955 [Baltimore].

The first of the two patients reported on stated that he was working on a machine that was blowing liquid plastic material through a small opening into moulds. This plastic material was being forced into the moulds under 4,000 lb. pressure per square inch and 500 F temperature. Accidentally this molten plastic material penetrated deep into his left hand and hardened immediately. He complained of severe pain and inability to move his thumb, index, and middle fingers. His left hand was swollen and tender, and palpation indicated that it was filled with solidified plastic material. Two large pieces of this plastic material were removed, one from the thenar space, and the other from the midpalmar space. Tetanus and gas antitoxin were administered, but gas bubbles were seen to come through the suture line on the sixth postoperative day. When culture revealed clostridium perfringens, the wound was opened widely. The cavity in the hand was closed by a skin graft on the 35th hospital day. On discharge from the hospital about two weeks later, it was evident that movement of the thumb, second, and third digits would be greatly limited owing to damage to the flexor tendons and the intrinsic musculature of the thenar area. Further operations were performed, and the patient returned to work. The second patient required a skin graft on the dorsum of his left hand. A bone graft to fill the defect of his fourth metacarpal and tendon grafts to restore the extensor function of his hand were planned for a later date. Injuries from molten plastic material differ from grease gun injuries in that the plastic material immediatly solidifies and can be removed in its entirety; whereas the oil accumulations remain indefinitely in the tissues and cause granulomatous reactions. Pressure and thermal effects cause the injury in case of contact with molten plastic material. At the time of the acute injury it is difficult to determine accurately the depth and extent of the injury. The repair of the hand injured by molten plastics is not unlike that of other injuries to the hand, once the process of destruction is clearly demarcated.

Primary Malignant Tumors of the Hand. R. H. Clifford and A. P. Kelly Jr. Plast. & Reconstruct. Surg. **15:**227-232 (March) 1955 [Baltimore].

The authors studied the incidence of malignant tumors of the hand in a series of 757,827 persons registered at Henry Ford Hospital and its clinics. In this series there were 9,741 with pathologically verified malignant tumors, an incidence of 1.3%. Sixty-three malignant tumors primary in the hand were registered, an incidence of 0.008%. The carpal malignant tumors represented 0.62% of all malignant tumors. This latter figure is well below the 1.1% reported by Schreiner and Wehr in 11,212 patients with malignant tumors. The 63 malignant tumors primary in the hand included 47 squamous cell carcinomas and 5 basal cell carcinomas, that is, these two types of carcinoma occurred in a ratio of 9 to 1. All of the basal cell lesions were cured by a single excision. The squamous cell carcinomas occurred mostly in men (39 men and 8 women). These tend to develop in scars or preexisting neoplasms, over 55% of the squamous cell carcinomas in this series being preceded by such lesions. Those arising from normal skin had an average duration of only 5.5 months. Since most patients with this carcinoma die of intercurrent disease, and since 90% of those who die of the tumor do so within two years, the authors evaluated the results on the basis of a three-year-survival, 31 of the 47 surviving for this length of time. The four malignant melanomas of hand and fingers included two subungual melanomas, a melanosarcoma arising in a blue nevus, and a melanoma of the dorsum of the hand. The patient with melanoma of the dorsum was admitted in extremis with metastases to regional nodes and viscera and died 37 days after biopsy excision of the primary lesion. The patient with melanosarcoma was living without evidence of disease eight years after wide local excision. The two melanotic whitlows were treated by digital amputation, one patient dying seven years later without evidence of melanoma, the other alive six years postoperatively without evidence of disease. Neither of the subungual melanomas was grossly pigmented and their true nature was not suspected. There were two malignant tumors of the bones of the hand. One was an osteogenic sarcoma of the fourth metacarpal with a seven-year survival without evidence of disease following an amputation of the fourth and fifth rays; the other was a Ewing's endothelioma of the proximal phalanx of the middle finger. This patient had widespread metastases found at autopsy five months after amputation of the involved ray. There were five sarcomas involving the hand. One of these was a mesotheliosarcoma, the remainder being fibrosarcomas. The mesotheliosarcoma showed no evidence of recurrence nine years after local excision. Three patients with fibrosarcoma were free of disease, two after wide excision 20 and 26 years earlier, and one after amputation of the hand 11 years earlier. One patient died one year after amputation of the hand for an extensive lesion of the thenar eminence. In view of the results obtained with relatively conservative procedures, the authors find it difficult to accept the suggestions of some that arm or shoulder girdle amputations are the most suitable form of treatment for malignant tumors of the hand.

Reconstruction of Hand Digits by Toe Transfers. P. Clarkson. J. Bone & Joint Surg. **37-A:**270-276 (April) 1955 [Boston].

Clarkson believes that the method of dorsal-flap transfer of a toe is a safe one and that useful function can be afforded the toe on the hand. It is the only method of complete digital reconstruction that will add a digit to the hand, can provide movement within the restored part, and will provide the part with a growing nail. The technique of transfer that he adopted is accomplished in the following stages: (1) preparation of the dorsal flap on the foot, (2) attachment of the dorsal flap on the foot to the hand, (3) attachment of tendons, (4) detachment of the flap and toe from the foot, and (5) later remodeling. A dorsal flap on the foot of at least 1.5 by 1.5 in., based distally over the metatarsophalangeal joint of the toe to be transferred, was used for single digit transfers. He "delays" this flap in one or two stages. For four-digit or five-digit transfers he uses virtually the whole of the dorsum of the foot, again delaying the flap one or two times at two-week intervals. The larger the flap, the more secure from the mechanical point of view is the attachment of the hand to the foot. Clarkson uses the foot on the same side as the hand, because it makes for easier nursing to have the arm along the outer side of the trunk and limb. He has transferred 15 digits in six patients, and he lost only half a digit in one three-digit transfer. This loss was due to faulty fixation of the hand to the foot and was not due to any inherent defect in the dorsal-flap method of transfer. He concludes that the transfer of one or more toes to the hand by the dorsal-flap method is entirely practicable and safe, and need cause no foot disability. A toe so transfered to the hand can add considerably to the function of an injured or deformed hand.

Application of Placental Tissue to Poorly Healing Wounds and Ulcers. A. J. Sneep. Nederl. tijdschr. geneesk. **99:**850-853 (March 19) 1955 [Haarlem, Netherlands].

Sneep employed placental tissue to stimulate healing in 12 patients with poorly healing wounds and ulcers. In preparing the placental tissue he adhered to the method described by Chippaux and associates. The placentas were obtained from women delivered by cesarean section and were prepared under sterile conditions. They were cut into pieces (about 2 cm.) and preserved in sterile bottles containing isotonic sodium chloride solution, to which penicillin and streptomycin had been added. They were kept at a temperature of + 4 C (39.2 F), as a rule not longer than eight days. No attention was paid to blood groups when the placental tissues were applied to wounds. The author presents histories of two patients. One was a 34-year-old woman, in whom ulcers had developed on both ankles after a postpartum thrombosis. The ulcers had proved refractory to various treatments. The ulcer on the right leg was excised, and placental tissue was applied with a plaster pressure bandage. This treatment stimulated the formation of active granulation tissue so that a full-thickness graft could be successfully applied. The second patient, a man, aged 46, had sustained a compound fracture of the left leg. A large skin defect existed, so that a part of the tibia was exposed. The wound cavity was filled with placental tissue, and a pressure bandage was applied. This treatment was repeated four times at intervals of 10 days. Epithelization was evident at the edge of the wound at the second change of bandage, and bright red granulations were visible in the center. The wound closed after the application of a full-thickness graft. The efficacy of the placental tissue is probably due to two factors: the intervillous spaces provide a support for the growing tissue, and hormonal factors exert an effect.

Experimental Vascular Grafts: IV. Arterial Homograft Degeneration. L. M. Nyhus, E. A. Kanar, H. G. Moore Jr. and others. Am. Surgeon **21:**289-307 (April) 1955 [Atlanta, Ga.].

Aortic homografts were implanted into the thoracic aorta of 41 healthy weanling pigs. The average weight of these pigs at the time of operation was 29 pounds (13.2 kg.). Four types of arterial homografts were studied: short, long, fresh, and preserved. Grafts over 5 cm. in length at implantation were defined as long grafts. A homograft was considered to be fresh when the graft was implanted into the recipient animal immediately upon its removal from the donor pig. A majority of the preserved grafts were stored in sterile light mineral oil at 4 C. The 19 preserved grafts were stored from 1 day to a maximum of 413 days. Thirty-two of the 41 pigs lived to maturity, 6 to 10 months after graft implantation. Nine pigs died at varying intervals after operation. Three pigs died of graft thrombosis 8, 19, and 106 days postoperative; three of thoracic cavity infection; one of peritonitis; one of aortic rupture above the graft at a point of weakness in the host aorta created at operation by a heavy shunt ligature; and one of undetermined cause. The average weight of the 32 pigs that reached full maturation was 228 pounds (103.6 kg.). Fresh arterial homografts usually lose their cellular viability, and are replaced by host tissues. Original homograft elastic tissue may be retained in the host replaced graft for an indefinite period. Calcific deposition was found primarily upon residual graft elastic tissue. Microscopic evidence of calcific degeneration may be seen as early as 19 days after graft implantation. Given the proper conditions, which are rarely fulfilled, fresh arterial homografts may remain viable, and will respond to transplantation in the same fashion as arterial autografts. The short, long, fresh, and preserved arterial homografts used in these experiments, demonstrated an unusually high incidence of degenerative change. Cellular viability at the time of graft implantation did not alter the high incidence of degenerative change in these grafts. Graft preservation increased the severity of the degenerative changes noted, but a definite correlation between the length of graft preservation and graft degenerative change could not be made. Arterial homografts may elicit a modified antigenic response after transplantation. The authors point out that the marked degeneration of thoracic aorta homografts is in direct contrast to previous observations in similar grafts implanted into the abdominal aorta of the same experimental animal. The factors of graft length, graft preservation, anatomic site of graft implantation, and graft antigenicity may or may not be related to arterial homograft degeneration.

Use of Freeze Dried Human Fascia Lata in the Repair of Incisional Hernias. F. C. Usher. Am. Surgeon. **21:**364-369 (April) 1955 [Atlanta, Ga.].

Although the use of autogenous fascia has definite advantages, its popularity has been limited because of the necessity of an additonal incison into the patient's thigh to obtain the fascia. The surgical department with which Usher is connected began to investigate the use of homologous human fascia preserved by the procedure of freeze-drying or lyophilization. Human fascia lata was obtained from the thighs of suitable subjects at autopsy, cleaned of fat and areolar tissue, divided into strips 1.5 cm. in width, and attached to Gallie needles with no. 36 stainless steel wire according to Gallie's technique. The fascial strips with needles attached then were wrapped with gauze in bundles, then placed in jars of isotonic sodium chloride solution containing penicillin and streptomycin, and stored at 4 C (39 F) in a refrigerator for 24 to 48 hours. Next, the bundles of sutures were placed in separate sterile Pyrex glass tubes and sterilized by adding sufficient ethylene oxide to cover the bundle. After 30 minutes of immersion, the ethylene oxide was poured off and the tubes containing the sterilized fascia were stored in a deep-freeze at –10 C (14 F). The frozen tubes of fascia then were subjected to freeze-drying. At the end of this procedure, the fascial strips are almost completely dehydrated, and in the vacuum in the sealed glass tubes will last indefinitely. To reconstitute the fascia the dehydrated strips with needles attached were removed from the sealed tube and placed in sterile normal saline solution for five minutes. The reconstituted fascia then had the appearance and texture of fresh fascia. Sixty-three hernias have been repaired with the lyophilized human fascia lata. There were four recurrences and two infected wounds. All four recurrences have been repaired, and the patients have had no further trouble. Histological studies of the wounds of 14 patients with carcinoma whose incisions had been closed with the lyophilized fascia showed no foreign body reaction to the lyophilized human fascia, and tensiometer tests showed no decrease in the tensile strength of the implanted fascia. The author feels that further investigation of this type of suture material is warranted.

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Persistent Suture in Resected Stomach as Cause of Melena. H. Schrijver. Belg. tijdschr. geneesk. **11**:333-336 (April 1) 1955 (In Flemish) [Leuven, Belgium].

Schrijver presents the histories of two patients in whom recurrent attacks of melena occurred after gastric resection. In the first patient a gastrotomy disclosed, at the anastomosis at the juncture of stomach and intestinal mucosa, a bleeding erosion from which protruded 5 cm. of suture material. When this suture was pulled out, it was covered for 2 cm. with coagula. No other pathological changes were found in the stomach that could explain the melena. The suture was a remnant of the continued seromuscular suture made at the earlier Billroth 2 resection. A year after the gastrotomy for the removal of the suture remnant the patient was well. The second patient, who had been subjected to a Billroth 2-Polya operation, because of a pyloric ulcer, had persistent gastric symptoms, signs of anemia, and persistent occult blood in the feces. After blood transfusions a laparotomy was performed, in the course of which an incision was made into the stomach. Many erosions were seen in the stomach, a diagnosis of hemorrhagic gastritis was made, and the stomach was closed. After this operation the anemia persisted despite blood transfusions. About two years later a gastroscopy was done, and a persistent suture was seen. After this was removed, the patient's hemoglobin level remained normal. Gastroscopy should be performed whenever there are signs of postoperative gastric hemorrhage.

Elephantiasis Chirurgica: Cause and Prevention. J. M. Parker, P. E. Russo and F. E. Darrow. Am. Surgeon **21**:345-358 (April) 1955 [Atlanta, Ga.].

In proof of their concept that elephantiasis chirurgica is caused by venous insufficiency, Parker and associates made studies on over 100 consecutive cases of cancer of the breast in an attempt to ascertain the venous changes in the axillary vein, coincident with, and as a result of, radical mastectomy. Serial examinations were made, beginning before operation, at the time of the first dressing, and at intervals of one to several months thereafter. All operations included a complete dissection of the axilla, with intra-adventitial stripping of the axillary vein from its midpoint to at least 3 cm. lateral to the subscapular vein. In many, a metal clip was fastened about the stump of the ligated subscapular vein to better identify the region in subsequent venograms. To interpret the various physiological changes that occur after mastectomy, the authors relied on venous pressure determinations and venograms in order to follow the degree of venous embarrassment of the axilla. Measurements were made on the arm operated on in order to demonstrate the degree of swelling. The authors base their conclusions on evidence obtained from 33 patients, who could be followed in great detail. This group in turn is divided in three categories, the first of which represents 17 patients who had carcinoma of the breast and were treated by radical operation alone. Category 2 represents seven patients who had carcinoma of the breast with metastases to the axilla, who were treated by radical operation and postoperative radiation therapy. Category 3 represents nine patients who had incurable cancer. Investigative data from the 17 patients treated by operation alone illustrate: (1) the nature of venous obstruction, (2) the increased venous pressures, and (3) swelling of the arm incident to mastectomy. Venous changes in this group of patients varied from very slight damage to complete occlusion of the major veins. The pattern of venous obstruction after mastectomy is unpredictable, but can be classified into any of four types, by examination with venography. Venous embarrassment, denoted by reduction in caliber of the vein or occlusion of the vein, is associated with elevation of venous pressures. Edema of the arm results from the rise in venous pressure, and the degree of swelling corresponds with the degree of pressure elevation. The traumatic thrombophlebitis and elevated venous pressures are temporary and are reversible processes. Swelling of the arm, on the contrary, becomes a permanent feature unless controlled when the venous pressures are high. Routine application of an elastoplast compression bandage to the arm is recommended as the best means to escape elephantiasis chirurgica.

NEUROLOGY & PSYCHIATRY

Radioactive Phosphorus in the Localization of the Brain Tumors. R. C. Schneider, H. Pantek, D. G. Freeman and others. J. Michigan M. Soc. **54**:434-444 (April) 1955 [St. Paul, Minn.].

Radioactive phosphorus (P^{32}), varying in range from 125 μc to 1 mc., was injected intravenously preoperatively in 50 patients with suspected intracranial lesions. By exploring the brain with a Robinson-Selverstone (Geiger counter) probe, the diagnosis of intracranial neoplasm was correctly made in 46 patients. Of the remaining four patients, there was insufficient evidence of an increased P^{32} uptake ratio in two; in one of these two the tumor was inaccessible to probing and in the other patient a cerebral thrombosis was revealed. There was one patient in whom a cerebral abscess was found instead of an intracranial neoplasm. The fourth patient presented the only false-positive uptake ratio, suggesting the presence of a tumor, although none was found; it was believed that the probe had touched the choroid plexus resulting in an abnormal ratio of uptake of P^{32}. In administering the radioactive isotope the health aspects of radiation exposure of the patients and of the attending personnel were also considered, and the exposure doses were estimated and measured. The permissible dose is taken as 0.3 r per week or 0.043 r per day. For an average life (i. e., 1.443 $\times$ half-life) of 21 days the irradiation dose received per day from 1 mc. of P^{32} is about 1.3 equivalent roentgens. About half of this dose at most is received by any type of tissue. Biological elimination further reduces it by approximately one-half. The exposure of the personnel attending the patient was found well within the tolerance dose of 300 mr per week. With the use of radioactive phosphorus, a new and effective weapon has been placed in the surgical armamentarium of the neurosurgeon, which when properly employed is an invaluable adjunct in gaining additional information on the location, extension, and completeness of excision of intracranial tumors.

Hypophysectomy in Man: Experiences in Severe Diabetes Mellitus. R. Luft, H. Olivecrona and B. Sjögren. J. Clin. Endocrinol. **15**:391-408 (April) 1955 [Springfield, Ill.].

Three men and four women between the ages of 23 and 30 with longstanding juvenile diabetes mellitus associated with progressive malignant vascular complications were subjected to hypophysectomy at the department of neurosurgery of the Serafimerlasarettet in Stockholm, Sweden. Three of these patients are alive from one to two and a half years after the operation. Hypophysectomy was performed recently in two additional patients aged 32 and 23 with severe diabetes mellitus who had been followed postoperatively for two months. All patients had progressing impairment of renal function and diabetic retinopathy. Following removal of the hypophysis, insulin sensitivity increased, thus permitting a pronounced decrease in insulin dosage. The authors' original intention was to keep the hypophysectomized patients on testosterone propionate, desoxycorticosterone acetate, and thyroid hormone and to avoid cortisone because of its diabetogenic effect. Although some of the patients could get along rather well without cortisone, small doses of as little as 5 mg. per day considerably improved their appetite and thereby reduced the danger of hypoglycemia. Postoperative complications in the first seven patients consisted of severe hypoglycemia in three, epileptic attacks in four, pronounced anemia in four, and anorexia in two. Postoperative tests of function of the adrenal cortex and the thyroid showed that the hypophysis had been removed completely; the authors believe that this is necessary in order to obtain a therapeutic result. The primary aim in performing hypophysectomy was to stop the progress of the vascular complications. It is difficult to appraise the results of the operation in this respect, since the retinopathy in all but one patient was far advanced and irreversible. In the patient in whom the rapidly progressing retinopathy had not advanced to amaurosis before the operation, there was no progression of retinopathy in a period of one year after hypophysectomy. In the patients who were hypertensive, the blood pressure became normal after the operation, and in two patients albuminuria of long standing disappeared.

Cerebral Hemispherectomy for Control of Intractable Convulsive Seizures. L. A. French, D. R. Johnson, I. A. Brown and F. B. Van Bergen. J. Neurosurg. **12:**154-164 (March) 1955 [Springfield, Ill.].

The authors present their experiences with cerebral hemispherectomy for the control of intractable convulsive seizures. The first patient operated on primarily for seizures was a 38-year-old man, in whom in February, 1950, a left cerebral hemispherectomy was performed in an attempt to control persistent status epilepticus, which had existed intermittently for six weeks, controlled only when under sodium pentothal anesthesia. Following removal of the entire left hemisphere he had no more seizures but did have a persistent right hemiparesis that did not prevent his being up and around and doing minor jobs around the house. Before hemispherectomy he had a global type of aphasia but postoperatively he had fair speech comprehension and production. Subsequently eight more patients were treated by hemispherectomy. All eight had an infantile type of hemiplegia associated with uncontrollable seizures. They were institutionalized epileptics. The main criteria used in the selection of these patients were that they must have had a hemiparesis since infancy or early childhood and also grand mal seizures uncontrolled by what is generally considered adequate anticonvulsant medication. There were no surgical deaths in this series. The results of cerebral hemispherectomy in these nine patients have been gratifying. Eight of the nine patients were completely relieved of their seizures for 6 to 57 months. The remaining patient had a 90% reduction of seizures up to her death from diphtheria 13 months postoperatively. Most of the patients are now taking no anticonvulsant drugs. The preexisting neurological defects have not been aggravated and in at least one there has been a definite improvement. According to psychometric evaluation no patient's intellect was reduced by the procedure. Although none of these patients was operated on for behavior disturbances as such, personality adjustment was greatly improved in some of them. One patient had been difficult to manage and frequently had to be placed in seclusion to protect others and herself from her violent tantrums. Postoperatively she became cheerful and cooperative. Since such a behavior disturbance is even more incapacitating socially than are seizures, it is thought that severely disturbed patients with infantile hemiplegia and with only a few or no seizures might well be considered as candidates for hemispherectomy.

Observations on Ventricular and Lumbar Subarachnoid Peritoneal Shunts in Hydrocephalus in Infants. M. Scott, H. T. Wycis, F. Murtagh and V. Reyes. J. Neurosurg. **12:**165-175 (March) 1955 [Springfield, Ill.].

Progressive hydrocephalus presents a therapeutic challenge, and more treatments have been advocated than successes recorded. Scott and associates are concerned chiefly with the ventricular and lumbar subarachnoid to peritoneal cavity shunts in infants having progressive hydrocephalus. They review observations on 32 infants with progressive hydrocephalus on whom a shunt operation was performed. In 10 patients the hydrocephalus was noncommunicating, and in 22 it was communicating. Ventriculoperitoneal and lumbar peritoneal shunts controlled the hydrocephalus in only 9% of the patients over a maximum follow-up period of four years. The results in communicating hydrocephalus are better than in the noncommunicating type, the survival rate being 73% in communicating and 40% in noncommunicating hydrocephalus during a follow-up period of less than one year to four years. The operative mortality for 67 operations was 5%; the case fatality rate was 38%. The results, however, are entirely unpredictable; blockage of the system is frequent in the peritoneal cavity, and in 32 original operations, 35 reoperations were necessary for this complication. Portex tubing or any plastic tubing containing a plasticiser should be avoided because of a tendency of these substances to later become brittle and crack. Polyethylene is preferable but has the disadvantage of kinking when bent. A stainless steel peritoneal button was satisfactory in half of the six patients in whom it was used, but it was obstructed by omentum in two. Omentectomy might increase the efficiency of this button. Davol 9 rubber tubing is well tolerated in the ventricles and spinal subarachnoid space and shows only a slight capsular reaction in the subcutaneous tissues. The authors believe that so far it is the material of choice for the extraperitoneal portion of the shunt. The operation of ventricular or lumbar peritoneal shunt should not be abandoned. The procedure is simple, the operative mortality is low, and some lives are prolonged. In some postmeningitic cases, the procedure may prevent severe brain destruction during the acute stage of the block and keep the patient alive until adequate pathways of fluid absorption are established and spontaneous remission occurs. Other factors may contribute to blockage in addition to the usual peritoneal-omental reaction to foreign material. The constant drainage of ventricular or subarachnoid fluid might well result in prolonged negative pressure in the ventricular or subarachnoid part of the shunt, and positive pressure in the intraperitoneal portion of the shunt could force omentum or the intestine against the tube or button for a period long enough to permit adhesions to form. Some mechanism (perhaps a valve) that would keep the ventricular or subarachnoid pressure just above that of the peritoneal cavity might reduce the incidence of blockage in these shunts.

Chlorpromazine in Obsessive-Compulsive and Allied Disorders. W. H. Trethowan and P. A. L. Scott. Lancet **1:**781-785 (April 16) 1955 [London, England].

Seventy-five patients were selected for a therapeutic trial with chlorpromazine. Only those who had psychoneuroses or personality disorders with obsessive or compulsive symptoms were included. Sixteen patients did not complete a course of sufficient length or regularity to permit valid conclusions to be drawn. The clinical assessment of the results is therefore confined to 59 patients. All the patients received both chlorpromazine and an inert, though apparently identical, placebo, both taken orally. No patient knew that a placebo was being used. More than half the patients had a week without treatment at some time during the course. In those who responded to treatment sudden withdrawal of chlorpromazine produced a relapse. After this some did not respond when chlorpromazine was again given. The inadvisability of sudden withdrawal is emphasized. Twenty-seven patients appeared to receive some benefit from chlorpromazine in the initial stages, but only 19 of these improved to any substantial degree. Patients in whom tension and anxiety were prominent obtained the best results. In the control of classical obsessive-compulsive symptoms chlorpromazine proved disappointing. Though some phobic symptoms and intellectual rumination seemed to be partially relieved, no lessening of the incidence and severity of compulsive rituals was observed. The only compulsive symptoms responding significantly to chlorpromazine were aggressive urges toward self or others and obsessive-hypochondriacal ideas. When selecting patients for treatment with chlorpromazine the presence of anxiety, tension, and certain other symptoms provides a more reliable criterion than does the degree of conformity with any theoretical diagnostic category. Side-effects, although common, were not serious, except jaundice, which occurred in three cases. Although a previous history of jaundice, unless recent, is not necessarily a contraindication, it seems unwise to give chlorpromazine to patients suspected of hepatic dysfunction. It appears that, provided adequate supervision is maintained, chlorpromazine may safely be used to treat outpatients with neurotic disorders in which anxiety and tension are prominent.

"Dia-Cephalorachidian" Treatment in Neuralgias of Trigeminus. G. Berselli and O. Giordani. Riforma med. **69:**229-232 (Feb. 26) 1955 (In Italian) [Naples, Italy].

The authors report the results obtained with "dia-cephalorachidian" treatment in 27 patients with trigeminal neuralgia. This treatment consists in removing some spinal fluid and reinjecting it or injecting distilled water, gas, iodine solution, or other agent by the same route. This form of treatment was first introduced in Italy in 1927 by Boschi, who stated that any alteration that

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is produced in the milieu of the cerebrospinal fluid causes reactions that can benefit a number of neurological conditions. The authors removed 8 to 10 cc. of fluid from patients with trigeminal neuralgia and then injected 2 cc. of double distilled water. The procedure was performed once in most of the patients, twice in a few. Seventeen patients were cured, and four were greatly improved. There was no change in the condition of six patients, three of whom were old (70, 78, and 82 years). One of the patients has been well since 1946, another since 1948. The authors state that this treatment should always be followed by the administration of the drugs that are generally used to treat trigeminal neuralgia. It should always be carried out in patients with this condition before operation is resorted to.

The Treatment of Tic Douloureux with Stilbamidine. G. W. Smith and J. M. Miller. Bull. Johns Hopkins Hosp. **96:**146-149 (April) 1955 [Baltimore].

Stilbamidine (4.4′ stilbenedicarboxamidine) was used by Smith and Miller in 16 patients with tic douloureux. The course of treatment consisted of intravenous injection of 0.15 gm. of stilbamidine once daily for 14 days. The 0.15 gm. of stilbamidine is dissolved in 200 cc. of a 5% solution of glucose in distilled water. The injection is made slowly, because a shock-like reaction may result from rapid administration. Deaths due to delayed poisoning have been reported due to combined hepatic and renal injury. The solutions used had been prepared in England and shipped to Africa by air. Solutions are not stable and become toxic; a sixfold increase in toxicity has been established after exposure of the solution to light for two days. Excellent results were obtained in 15 of the 16 patients, and a good result was obtained in one. The corneal reflexes were preserved in all patients, being brisk in 14, questionably blunted in one, and slightly decreased in one, but the degree of impairment was not significant. The blunting of the corneal reflexes in one patient was due to a combination of a previous operation on the same side and the effect of the stilbamidine. The paresthesias noted most often were pruritus and formications of the face. They appeared first and were more severe in intensity on the side of the face involved by the tic douloureux. The pruritus was noted about the third to the fourth month after the administration of the drug and lasted for about one and one-half months. The mild paresthesias did not inconvenience the patients. The stilbamidine treatment is effective, safe, and inexpensive. The risk of operation is avoided in these patients, many of whom are old and have associated diseases.

Neuritis Following Serum Therapy. F. G. Dickey. Maryland M. J. **4:**184-186 (April) 1955 [Baltimore].

Dickey recently observed two men, aged 31 and 38, respectively, in whom peripheral neuritis developed after the injection of tetanus antitoxin. The first had a peripheral neuritis involving primarily the brachial plexus, and the second had signs and symptoms of a more diffuse polyneuritis. Both had disability extending over many months indicating the serious nature of this complication. The theory commonly held to explain this nerve involvement is the presence of edema of the nerve trunk with constriction and impairment of function. This edema is similar to that occurring in hypersensitive states such as urticaria and serum sickness. The paralysis appears quickly and unexpectedly and, in spite of measures customarily used to treat serum sickness, may progress. The administration of epinephrine and antihistaminic drugs is indicated, but benefit is questionable. Mild cases may recover in four to six weeks. After the acute phase has passed, emphasis must be placed on physiotherapy. Electrical stimulation, muscle training, and reeducation offer maximum benefit. If, after six weeks, atrophy develops and paralysis continues, return to function may be incomplete. Dickey urges active immunization for tetanus followed by booster injections of tetanus toxoid to maintain an adequate titer of antibody, hoping thereby to avoid the occurrence of neuritis following the prophylactic administration of tetanus antitoxin.

GYNECOLOGY & OBSTETRICS

Potassium Depletion and Replacement in Hyperemesis. J. P. B. Fitzgerald. New Zealand M. J. **54:**36-50 (Feb.) 1955 [Wellington, New Zealand].

Fitzgerald studied 10 patients with hyperemesis gravidarum, all of whom had dehydration with ketosis. The electrolytes, especially potassium and chloride, were determined in the plasma and urine before and during treatment. A deficit of potassium ions seems to be a factor in retarding recovery in some patients with hyperemesis. The causes of potassium deficiency in hyperemesis are: anorexia, which results in diminished intake; protein catabolism; loss from skin and intestine, especially in gastric juice; a failure of the kidney to conserve potassium; renal loss that may be increased by the adrenal corticoid response to stress. The generally accepted methods of treatment were used. No fluids were given by mouth while the patient was vomiting or nauseated; and water, dextrose, sodium chloride, and vitamins were given parenterally in amounts sufficient for replacement. Promethazine was given twice daily in 50 mg. doses by intramuscular injection, from the day of admission until vomiting ceased. Plasma transfusion was given in six cases. When the plasma potassium reading was low, or the patient was judged to have a substantial loss of potassium ions, potassium chloride was introduced into the intravenous transfusion as a 0.2% solution. In view of the risk of hyperkalemia, not more than one liter of this solution was given in four hours, which is well within the safety range. Chloral hydrate and potassium bromide mixture was given rectally for sedation as required. From the results of this investigation the author deduces that there is a place for the freer use of potassium salts parenterally, and for the rectal use of the bromide for its additional sedative effect, in women with hyperemesis. Convalescence seems to be shortened when potassium salts are given, and vomiting ceases sooner, but most patients with hyperemesis respond fairly well to the usual treatment. The dangers of hyperkalemia from too rapid administration and large doses of potassium salts intravenously cannot be overemphasized; thus this route should only be used when methods for rapid determination of plasma potassium levels are available.

Iron-Deficiency Anaemia in Pregnancy. P. B. B. Gatenby and E. W. Lillie. Lancet **1:**740-743 (April 9) 1955 [London, England].

This report is concerned particularly with the iron deficiency anemias. On first attendance at the antenatal department one of every four women was anemic. The incidence of anemia rose in winter. Breathlessness was the commonest symptom and appeared to be related to the degree of anemia, but many patients were without symptoms. It is not possible to recognize anemia by clinical means unless hemoglobin level is below 6 gm. per 100 ml. Hemoglobinometry is essential. Spoon-shaped or breaking nails indicate long-standing anemia. A diet deficient in iron is the most important cause of iron-deficiency anemia. The authors advocate routine administration of an efficient iron preparation in every pregnant woman. Ferrous gluconate was tolerated well by 90% of the patients, whereas ferrous sulfate (whether molybdenized or not) was tolerated by only 50% of the women. In the absence of intolerance, there is little difference in the hematological response to ferrous sulfate and ferrous gluconate.

Maternal Hydramnios and Congenital Anomalies of the Central Nervous System. R. A. Prindle, T. H. Ingalls and S. B. Kirkwood. New England J. Med. **252:**555-561 (April 7) 1955 [Boston].

Prindle and associates studied the results of pregnancies complicated by hydramnios. All records of patients with a final diagnosis of hydramnios were used for computing the incidence of the disease at the Boston Lying-in Hospital for the years 1923-1949 inclusive; and the records of 145 patients with this diagnosis delivered from Jan. 1, 1935, through June 30, 1950, were subjected to more exhaustive analysis. These 145 pregnancies terminated in the delivery of 68 defective infants, including 45 with anencephalus, 8 with spina bifida, 6 with hy-

drocephalus, and 4 with mongolism. The diagnosis of hydramnios was based on clinical criteria: a disproportionately enlarged abdomen relative to gestational dates, dyspnea, dependent edema, ease of ballottement of the fetus, and difficulty in mapping fetal position. The amount of fluid present was not recorded, but investigations carried out by others indicate that the mean volume of amniotic fluid in hydramnios approximates 5 liters compared to a normal value of about 600 cc. At the Boston Lying-in Hospital 199 cases of hydramnios were observed among 55,359 live births, a rate of 3.59 per 1,000. Fifteen of 145 mothers were Rh negative and their husbands were Rh positive. The frequency (10%) is close to the 13% expectancy for American marriages in which husband and wife are theoretically predisposed to the production of an infant with erythroblastosis. Ten of the 145 deliveries resulted in erythroblastosis of the fetus, better than 10 times the expectancy of 1 in over 200 deliveries. That one form of erythroblastosis is characterized by edema of the tissues and free fluid in the serous cavities of the fetus has long been recognized. The authors feel that the high prevalence of erythroblastosis in this series focuses attention on the role of isoimmunization, fluid imbalance, and perhaps anemia in hydramnios. The association between rhesus-factor incompatibilities and numerous breaks in the placental barrier and hemorrhage into the maternal intervillous spaces is well known, as is the fact that the golden-yellow, water-logged placenta is associated with edema and occasionally hydrops of the baby. Toxemia, being present over three times as often in mothers with hydramnios as in the general lying-in hospital population, is further evidence of an association of hydramnios with a metabolic disturbance involving electrolyte and fluid imbalance. The indications are that hydramnios, anencephalus, fetal death, and many "monstrosities" seen in association with them are interrelated components of maternal placental fetal disease. Because the large majority of babies produced by women with hydramnios have defects of organs differentiating at an early stage of embryonic life, it is assumed that hydramnios in the human being usually has its genesis in the first trimester of pregnancy. The associated conditions, sometimes local, sometimes systemic, have a capacity to interfere with fetal and placental circulation, oxygen, and fluid balance. The fact that hydramnios is frequently associated with anomalous development of both placenta and baby suggests that both defects are developing concomitantly and that they are manifestations of the same maternal disease.

Malignant Changes of Endometriosis: Considerations on Two Cases of Ovarian Adenocarcinoma Arising in Endometriosis. G. Mancusi-Materi. Gior. ital. chir. **11:**101-114 (Feb.) 1955 (In Italian) [Naples, Italy].

Internal and external endometrioses, the various theories of their pathogenesis, and the possibilty of their becoming malignant are discussed. The histogenetic diagnosis of malignancy arising from endometriosis is difficult and is based mainly on the more or less marked anaplastic conditons of the malignant mass and on the identification of zones of transition between benign and malignant epithelium. A histogenetic endometrial diagnosis cannot be formulated when these two conditions are not present even if vast zones of nodules or endometrial tissues are found in the mass of the tumor. Two cases of adenocarcinoma arising in an endometrial tumor of the ovary are reported. In these two cases the histopathogenetic diagnosis was possible mainly because zones of transition from benign to malignant epithelium were present. In both patients the preoperative diagnosis was that of an ovarian tumor, and the uterus and the adnexa were removed. The histological examination revealed, however, an ovarian adenocarcinoma due to malignant transformation of heterotopic endometrial tissue in the ovary of the first patient. In the second patient it revealed diffuse utero-ovarian endometriosis with malignant transformation of the glandular tissue in the ovary. The abnormal development of fibrous tissue that was found in the structure of both tumors could not have indicated an ovarian condition, because it is well known that the ovarian stroma reacts easily even in secondary metastatic tumors.

Combined Estrogen-Androgen Therapy in Climacterium. S. Juhl. Nord. med. **53:**494-495 (March 24) 1955 (In Danish) [Stockholm, Sweden].

Follow-up of 53 patients with marked climacteric symptoms treated with combined estrogen-androgen hormone preparation showed excellent results in 46 cases, transient effect in 2 cases, and no response in 5. Side-effects in the form of acne and increased facial hair growth were seen in five cases; these phenomena usually disappear on termination of the treatment. Uterine bleeding occurred in only one instance. The combined treatment is considered superior to estrogen or androgen therapy alone. Because of the reciprocal supporting action of the two components it fully equals other treatment in its effect on the menopausal symptoms and it exerts a more stimulating effect on the general condition and libido, which is of special importance to young women with artificial menopause. Uterine bleeding is inhibited by the androgenic component, the virilizing action of the androgenic component, by the estrogenic component.

PEDIATRICS

Neuroplegic Medication Associated or Not with Controlled Lowering of the Central Temperature in Weak Premature Newborn Infants. H. Pigeaud and A. La Selve. Presse méd. **63:** 489-491 (April 2) 1955 (In French) [Paris, France].

The average mortality rate for premature infants weighing less than 2,500 gm. has been reduced to 21.5% in recent years, but when those weighing less than 1,500 gm. are taken separately the rate is 71.4%. Every reasonable method by which this high mortality rate can conceivably be reduced should be given a trial. Antishock therapy with ganglioplegic medication, usually combined with refrigeration, was therefore used in treating 20 premature infants, only 4 of whom weighed more than 1,500 gm. and several of whom were in poor condition. A standard dose of 1.8 mg. of largactil in 24 hours was adopted and the medication was administered intramuscularly in divided doses at 45-minute intervals, usually for a period of 8 hours only to lessen the danger of abscess formation associated with multiple injections. The perlingual route was also used later, when largactil became available in a solution for oral administration; dosage then consisted of one drop every 45 minutes in a dilution supplying 3 mg. in 24 hours. The infants subjected to hibernation were placed at birth in an incubator with a humid oxygenated atmosphere and a temperature of 29 C at the outset; this was increased 1 degree a day until the rectal temperature of the newborn (average minimum, 30 C) was about 37 C. Signs of shock, when present, disappeared rapidly under the effect of the combined hibernation and medication; the infant's appearance was tranquil, his breathing regular, and his color satisfactory. The treatment, therefore, when well managed is completely innocuous and its immediate effects are beneficial, though sometimes transitory. Study of the temperature curves of the infants treated by hibernation with largactil for eight hours only showed that in some the temperature rose independently of the temperature of the incubator when the effect of the drug wore off, while in others the central temperature remained low, varying only in accordance with the temperature of the incubator. All the infants in the first group survived, but most of those in the second died more or less soon. Hibernation may be especially valuable for infants who are capable of individual homeostatic reactions as a means of accustoming them to their new physiological state. No reduction in the average mortality rate was seen in this small series of patients, only six of whom survived, but the results of hibernation treatment are undeniably interesting and its therapeutic effect should be studied further.

The Treatment of Celiac Disease with the Specific Carbohydrate Diet: Report on 191 Additional Cases. S. V. Haas and M. P. Haas. Am. J. Gastroenterol. **23:**344-360 (April) 1955 [New York].

One hundred ninety-one children with celiac disease, the onset of which occurred between birth and the age of 6 months in 64, between the ages of 6 months and 4 years in 122, and

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after the age of 4 years in 5, were placed on a specific carbohydrate diet for 12 to 18 months. The basic principle of the diet is that no food may be ingested by the patient with celiac disease which contains an appreciable amount of carbohydrate other than that found in fruits, and to a lesser extent in vegetables, and in protein milk. Although all fruits may be used later, banana is the most satisfactory and the only safe fruit to be used at the outset of treatment. In addition to protein milk and fruits, the specific carbohydrate diet may contain protein in any form and fats in moderate quantities. Pure gelatine is given for dessert in this diet. Any cereal grain is strictly and absolutely forbidden, including corn, wheat, rye or rice in any form, whether as bread, cake, toast, zwieback, crackers, cookies, or breakfast cereals. Potatoes are prohibited. Sugar is forbidden as sweetening in the form of candy, pastries, breads, as well as dextrins such as found in corn syrups and lollipops. Whole milk, per se, is not allowed. Dietary supplements such as vitamin concentrates, especially vitamins A and D, are valuable and advised. Antibiotics are of true value only in treating infections associated with celiac disease and not in treating the disease itself. Symptoms of enterospasm such as colicky pain or vomiting indicate the use of anticholinergic drugs, and atropine sulfate in ascending small increment doses to levels where symptoms are ameliorated or eliminated is recommended by the authors. So-called celiac crisis with severe dehydration or with electrolytic imbalance was never observed by the authors in any patient who was treated with the specific carbohydrate diet. When the diet is carefully supervised, the child will be happy, pleasant, and tractable. There were neither temporary nor permanent adverse personality sequelae as a result of strict adherence to the specific carbohydrate diet. Of the 191 patients, control of the diarrhea was obtained in 73 (38%) within one month from initiation of the specific carbohydrate diet, in 17 within 1 to 2 months, in 58 within 2 to 5 months, in 24 within 6 to 10 months, and in the remaining patients between 11 and 14 months. The patients were continued on the specific carbohydrate diet for a minimum of 12 months. Then starches and sugars were added to the diet. In only one of the patients were the authors forced to continue the specific diet beyond 18 months, and this was caused by lack of parental cooperation both in maintaining the diet and in bringing the child in for regular examination. The other 190 patients tolerated starch and sugar without any recurrence of symptoms within 18 months after initiation of therapy; 175 children were given starch within 15 months after starting treatment, and 118 were on starch after 12 months of treatment with the specific carbohydrate diet. If the specific carbohydrate diet is followed for a period of from 12 to 18 months without any lapses whatsoever, then the physician can confidently predict that the patient will be able to return to a full and normal diet without any recurrence of symptoms and without any necessity for return to dietary restrictions.

The Use of Intramuscular Terramycin in Infections of Children. F. H. Schaefer. Ohio M. J. **51:**347-349 (April) 1955 [Columbus, Ohio].

Although the broad-spectrum antibiotics had advantages over penicillin and sulfonamides, they had the drawback that they could not be administered intramuscularly, a defect felt particularly when dealing with infants and children. Oxytetracycline (Terramycin) is now available for intramuscular use. Clinical trial has proved its value in the treatment of infections involving micro-organisms sensitive to oxytetracycline. Adequate blood levels of the drug can be maintained by intramuscular injection at 8-hour or 12-hour intervals. The dosage varies from 6 to 12 mg. per kilogram per 24 hours, although larger amounts are required in more resistant infections. If administered deeply into the muscle, local reactions are few and not severe. As with oral administration of oxytetracycline, the long continued intramuscular administration of the drug may result in Monilia infections. The author demonstrates on the basis of case histories that children with gastroenteritis, croup, meningitis, and infections complicating certain surgical conditions may be adequately treated by its use and it is the drug of choice when oral medication is not possible.

Aberrant Coronary Arteries: Experiences in Diagnosis with Report of Three Cases. W. C. Swann and S. Werthammer. Ann. Int. Med. **42:**873-884 (April) 1955 [Lancaster, Pa.].

In the course of 623 autopsies carried out at the pathological services of Saint Mary's Hospital in Huntington, W. Va., three cases of anomalous origin of the left coronary artery from the pulmonary artery were observed. The patients, two infant girls and one infant boy died at the ages of 3 months, 6 months, and 2 days respectively. Associated malformations were found in two of the cases; in one case the right coronary artery also originated from the pulmonary artery, and in the other case there was moderate coarctation of the aorta. Chest roentgenograms as part of postnatal examinations even in the absence of suggestive symptoms, and electrocardiographic studies in all cases showing cardiac enlargement are advised. Anomalous origin of the coronary arteries from the pulmonary artery has been considered a rare congenital malformation, but the authors are convinced that it is overlooked more often than suspected. Since the patient may be entirely asymptomatic until sudden death, the true incidence of this malformation will be known only when a larger study has been made, which includes chest roentgenograms on all infants in the course of the first two months of life. Not only is the correct antemortem diagnosis of academic value and of value in preparing the parents of a sick child for a possible sudden death, but also since quite a number of these patients reach adult life, if a correct diagnosis can be made, it will lead to the development of methods of surgical correction in selected cases. Surgical treatment of this malformation at the present time is considered of doubtful value.

Treatment of Epileptic Absences in Children. Experiences with Dimedion, Tridione, Paradione, and Milontin. S. Brandt and S. Bille. Ugesk. læger **117:**350-354 (March 24) 1955 (In Danish) [Copenhagen, Denmark].

Thirty-five epileptic children, mostly with typical pyknolepsy, were treated with Dimedion, Tridione, Paradione, or Milontin. On the first trial 29 were given Dimedion, four, Tridione and two, Paradione. Ten became completely free from attacks, and 10 were improved. Substitution of one of the other preparations in some cases brought the results up to 19 completely under control and 8 improved. An individual response to oxazolidine derivatives is seen, expressed clinically and in the occurrence of side-effects; a child with absences not influenced by one oxazolidine preparation may not be equally resistant to other preparations of the same group of substances. As a rule the daily dosage, apportioned in three or four doses, was 90 cg. of Tridione or Paradione, 100 to 150 cg. of Dimedion, and up to 180 cg. of Milontin. Underdosage is considered as great a mistake as overdosage. Treatment has usually been continued for a year after cessation of absences, and the inclination is now to continue it even longer.

DERMATOLOGY

Systemic Mast-Cell Disease with Urticaria Pigmentosa. E. B. Reilly, J. Shintani and J. Goodman. A. M. A. Arch. Dermat. **71:**561-569 (May) 1955 [Chicago].

A case of systemic mast-cell disease with infiltration in skin, liver, and bone marrow is described in a 34-year-old man with severe gastroenteritis. Physical examination disclosed typical lesions of urticaria pigmentosa. The patient also had hepatosplenomegaly that continued unchanged after the gastrointestinal complaints subsided. Laboratory examination revealed mild anemia and granulocytopenia. Roentgenologic examination showed areas of osteoporosis with pagetoid thickening of the bony trabeculae in the skull, pelvis, ribs, and humeri. Areas resembling bone infarcts were observed in the pelvis and both humeri. Aspirates of bone marrow and rib marrow revealed aggregates of mast cells. A needle biopsy of the liver showed mast cell proliferation in association with periportal fibrosis. It is suggested that the disease represents an uncommon reticuloendotheliosis. Thus urticaria pigmentosa may be thought of as one clinical variant based on predominant proliferations of mast cells in the skin. The function of the mast cell with regard

to heparin, histamine, and connective tissue is discussed. It is suggested that these functions are related to the cirrhosis accompanying systemic mast-cell disease. The patient was given 10 mg. of corticotropin (ACTH) by constant drip in the course of 8 to 10 hours daily for 7 days, and 200 mg. of cortisone was given orally for 18 days, followed by 400 mg. daily for 7 days. The authors were unable to show any consistent change in gross lesions or histopathology of the patient's cutaneous lesions that might have been interpreted as reflecting the effect of corticotropin or cortisone on the mast cell. Considerable variations occurred in the appearance of mast cells in simultaneously removed tissue samples. Accordingly, it is felt that one is not justified in drawing definite conclusions, as some other workers did, regarding mast-cell behavior on the basis of morphology alone. Suggestive evidence in physiological studies points to control of the mast cell by the pituitary- adrenal system. A hypothesis relating the interaction of heparin (a product of the mast cell) with procollagen (a product of the fibroblast) to form collagen is offered to explain the association of the mast cell with fibrous proliferation and the inflammatory response.

Cutaneous Manifestations of Myelogenous Leukemia. M. J. Costello, O. Canizares, M. Montague III and C. M. Buncke, A. M. A. Arch. Dermat. **71**:605-614 (May) 1955 [Chicago].

Four cases of myelogenous leukemia are described in a 16-year-old girl, a 73-year-old man, and in two women aged 59 and 64 years who presented different cutaneous reactions. The first patient had ulcerating tumors, the second generalized nodular plaque-like lesions, associated with pulmonary tuberculosis, the third petechiae, hemorrhagic blotches, and hemorrhagic bullae, and the fourth patient exhibited a combination of the others. The first manifestation in the youngest patient was abdominal pain simulating acute appendicitis for which an operation was performed. The difficulty in early diagnosis is the rule. The role of the dermatologist in alerting the physician to considering the possibility of myelogenous leukemia from the cutaneous manifestations, is emphasized. The therapeutic test with roentgen rays is offered as an aid in differentiating the radiosensitive specific infiltrative cutaneous lesions of the lymphoblastomas from cutaneous diseases that simulate them, especially certain types of lupus erythematosus. Cortisone in doses of 300 mg. daily for several days and then of 25 mg. daily as a maintenance dose was of value in controlling the symptoms of the disease. 6-Mercaptopurine (Purinethol) in doses of 75 mg. daily was of little value in the treatment of the 16-year-old girl, the only patient to whom this drug was given.

Clinical and Psychosomatic Study of 200 Cases of Psoriasis. M. Bolgert and M. Soulé. Semaine hôp. Paris **31**:1251-1261 (April 6) 1955 (In French) [Paris, France].

The importance of violent fear and intense emotional shocks in precipitating attacks of psoriasis is generally admitted. Evidence obtained from the study of 200 patients with psoriasis during the last four years tends to support the theory that less conspicuous, often unnoticed, psychological factors play a causative part in virtually every attack of psoriasis. These factors may be exogenous, consisting of emotional traumas arising out of personal relationships, or endogenous in the case of patients possessing a particular mental constitution or a hereditary predisposition to psoriasis, and they may exist separately or in various combinations. Psychasthenia, or a state of anxiety coupled with mild depression, was found in more than half (52.5%) of the patients in this series. A pure anxiety state, uncomplicated by depression, was evident in 32 patients (16%) with symptoms such as epigastric constriction, functional dyspepsia, globus hystericus, vasomotor disturbances, palpitation, and tachycardia. A hereditary predisposition to psoriasis was found in 37 patients, all but four of whom were also psychasthenic or anxious. The inheritance of psoriasis may be either direct or indirect. When it is direct, the condition usually appears during the first 10 years of life. Indirect inheritance, on the other hand, usually appears later and is probably linked to a particular mental constitution common to several, often collateral, members of a family. Psychological factors vary in their significance according to the intellectual level of the patient and the extent of the conflicts to which they give rise. A divorce, for example, may have no effect in producing an attack of psoriasis when it represents deliverance from an unhappy marriage, but when it appears as the forerunner of worries such as the necessity of paying alimony or being separated from children, possibly with feelings of guilt toward them in the case of a remarriage, moderate but lasting psoriasis may be the result. Serious parental discord, often manifested in open quarrels, was a precipitating cause of psoriatic attacks in 6 of the 15 children less than 15 years of age in this series. Six others had feelings of confusion and incompleteness caused by defective educational methods (absurd threats, excessive severity) or events such as the death of a parent, maternal psychosis, and real or fancied abandonment. An association between psychological factors and attacks of psoriasis was positively established in 48% of all the patients, and in 20.5% the connection was probable. The cause of the disorder could not be determined in 15 patients; in some of these, it may have been hereditary and in others the underlying psychological cause may have escaped detection because of the patient's reticence or inability to express it, or because the examiner failed to bring it out.

Psychogenic Theory of Psoriasis: Hypotheses: Clinical Arguments. M. Bolgert and M. Soulé. Semaine hôp. Paris **31**:1261-1267 (April 6) 1955 (In French) [Paris, France].

A study of 200 patients with psoriasis showed that more than half were unquestionably psychasthenic and that 16% presented pure anxiety states. Attacks of the dermatosis were frequently precipitated by psychic disturbances of various kinds. Hereditary transmission, found in at least 29.8% of the patients, was usually associated with the other factors, appearing by itself in only 2%. These findings support the theory that psoriasis is psychogenic in origin. The particular background and emotional conflicts found in many of these patients constitute the first two conditions required in the definition of a psychosomatic disorder. The third, which consists of a specific organic disposition, is still hypothetical, but the idea that there is a specific substance that serves as an intermediate link between the psychological phenomena that make up the mental background or act as precipitating agents and the skin lesions can scarcely be rejected. This substance is probably a neurocrine secretion, originating in the cerebrum and transmitted humorally. The fact that psoriasis does not appear in all persons suffering from psychic injuries may be accounted for by the assumption that this secretion can be produced only by certain patients. The existence of such a substance would explain many of the puzzling aspects of psoriasis, because the development of the disease would undoubtedly be closely related to the constancy with which it was secreted and to the degree of sensitization produced in the patient. Certain signs associated with psoriasis, e. g., frequent itching, a burning sensation, and electroencephalographic changes, and the symbolic significance of certain clinical aspects of the disease, can also be explained on the basis of its psychogenic origin. Painstaking psychotherapy, with careful analysis of the patient's conflicts, often leads to a cure. In many cases, however, the solution of the patient's problem depends on successful modification of the attitude of a third person, as in the case of a wife neglected by her husband or a child subjected to excessive parental severity.

UROLOGY

A Criticism of Renal Angiography. T. E. Nesbitt. Am. J. Roentgenol. **73**:574-583 (April) 1955 [Springfield, Ill.].

Renal arteriography was performed on 200 patients admitted to the urologic section of the department of surgery at the University of Michigan, Ann Arbor. Eight patients were selected from the group to illustrate the limitations of aortography. In a patient with hematuria and a left renal mass, a retrograde pyelogram showed the typical tumor deformity. Arteriography was advised and a suggestion of puddling of contrast material within the suspicious tumor area was noted. Exploration was carried out with removal of a large hypernephroma. The aortogram failed to alter the clinical decision for exploration made

on the basis of the retrograde pyelogram. A tumor deformity was noted in the right kidney on the retrograde pyelogram made in a patient with intermittent hematuria of nine months' duration; the arteriogram showed some increased vascularity in the region of the upper pole of the right kidney, with an avascular area associated with the lower pole interpreted as possibly representing a solitary cyst. Exploration was advised and a large lower pole hypernephroma was removed. The aortogram was of no clinical aid, and by contrast was actually misleading. In a patient with recurrent urinary tract infection for many years, a solitary cyst was found on exploration, and marsupialized. The aortogram, which was made before the exploration and which disclosed a typical cyst deformity, was an adjunctive but superfluous procedure. In a young woman in the first trimester of her first pregnancy, a tumor deformity was present on pyelography, and interruption of pregnancy and nephrectomy were considered. The aortogram showed what was interpreted as a solitary cyst, and the patient was allowed to continue her pregnancy to term without intervention; the arteriogram was an invaluable procedure in the management of this particular patient. The use of the aortogram in differentiating an adrenal lesion was not satisfactory in one patient. In the study of two patients with renal hypertension, renal angiography was practically of no benefit. In a patient in whom polycystic disease was suspected but a tumor could not be ruled out, the arteriogram was of benefit in establishing the diagnosis, yet the clinical management was little altered. It would appear that only in isolated, carefully selected cases is one justified in utilizing renal angiography, as it is often an unnecessary and frequently a redundant procedure. Its indiscriminate use is to be deplored because it subjects the patient to a general anesthetic, which is not without risk, adds a burden of additional expense to the patient, and often fails to provide significant information. Although arteriography has obvious shortcomings as a diagnostic procedure of aid to the urologist, it is firmly established as an adjunct to investigation. The cases presented are not cited to condemn the procedure, but to point out the necessity for more careful selection of patients subjected to this method of survey.

Translumbar Aortography as a Diagnostic Procedure in Urology with Notes on Caval Phlebography. N. S. R. Maluf and C. B. McCoy. Am. J. Roentgenol. **73:**533-573 (April) 1955 [Springfield, Ill.].

Translumbar aortography was performed as a diagnostic procedure in 250 urologic patients between the ages of 10 and 73 years. With the aid of local anesthesia using 0.5% procaine hydrochloride for infiltration of the subcutaneous tissues, and with water soluble organic iodine compounds such as a 70% solution of sodium acetrizoate (Urokon) or a 75% solution of sodium iodomethamate (Neo-Iopax) used as contrast mediums, the first being preferred routinely to the latter, lumbar aortography proved safe and essentially painless. The most serious complication observed in the authors' patients was division of the thoracic lymph duct. This as well as laryngeal spasm and severe temporary pain resulting from extravasation of the contrast medium, were caused by lack of familiarity with the technique and could have been avoided. The water-soluble organic iodides are not detrimental to renal function even when the latter is pronouncedly reduced by chronic disease. Even 80% sodium iodide injected directly into the renal artery in one case did not damage the kidney. An immediate pharmacological response to intra-aortic injection of a 75% solution of sodium iodomethamate was a prompt but fleeting lowering of arterial pressure, which was followed by a rapid rise to supernormal levels, returning to normal after about 10 minutes. Fluctuations in arterial pressure were practically absent in three thoroughly studied patients in whom a 70% solution of sodium acetrizoate was used. Electrical stimulation of the tibial nerve in the popliteal fossa of an unanesthetized young woman with normal kidneys resulted in appreciable contraction of the renal arteries. This observation was recently confirmed in other patients. Translumbar aortography proved to be a valuable aid in the differential diagnosis between renal adenocarcinoma and cyst. Of 49 patients in whom a differentiation between neoplasm and cyst had to be made, a correct diagnosis was made in 46. Renal cyst may include adenoma or abscess, and thus warrants surgical exploration. Pooling of the iodide in the kidney indicates the necessity for wide extirpation of the kidney, if possible, without entering the perirenal (Gerota's) fascia. This would not be possible if Gerota's fascia had to be entered for distinguishing between cyst and neoplasm. Aortography by showing the position and course of the renal artery was of aid in indicating the best approach to the renal pedicle in a case with renal neoplasm. Obstructing polar arteries or aberrant arteries were depicted by aortography preoperatively in patients with hydronephrosis without hydroureter and without obstructing renal pelvic calculus, and the amount of kidney supplied by such arteries was indicated. Other uses for aortography in urology consist of indicating the extent of stretch and narrowing of interlobular arteries in hydronephrotic "nonfunctioning" kidneys, thus suggesting whether such kidneys are viable; indicating whether a renal artery is obstructed; and the presence or absence of a kidney. The immediate nephrogram after transaortic injection of the organic iodide is an index of renal function and can depict cystic areas. Aortography combined with the previous introduction of oxygen into the retroperitoneum was found advantageous in the diagnosis of retroperitoneal masses, especially with stereoscopic exposure. Caval phlebography using both femoral veins, but preferring the right one, was performed in 20 patients; in 4 of the 8 with renal or adrenal neoplasm there was partial or complete obstruction of the inferior vena cava. The obstruction was usually intraluminal, but may be exclusively extraluminal.

Osteitis Pubis. V. D. Argento. Arch. ital. urol. **28:**56-69 (No. 1) 1955 (In Italian) [Bologna, Italy].

Osteitis pubis is a complication that develops after operations on the lower urinary tract. Although many hypotheses have been advanced to explain its cause, this is still unknown. Many authors suggest infection and/or trauma to the pubis at the time of the operation as the main causative factors. The incidence of osteitis pubis has increased significantly following the diffusion of Millin's operation. There may well be a correlation between this increase and the opening of the prevesical space. Pain involving the pubis is the main and first symptoms, and it arises from 15 to 40 days after the operation when the wound has already healed. In many instances locomotion becomes impossible. Roentgenograms reveal first a diffuse decalcification of the bones of the pubis, later a slight enlargement of the symphysis pubis with small areas of osteolysis. In some patients bone sequestrums can be seen on the roentgenograms. These, however, can be prevented with early and intense administration of antibiotics. The differential diagnosis of osteitis pubis is from metastasis following cancer of the prostate. Because the cause of the condition is unknown, the best treatment is still undetermined. The use of sulfonamides, penicillin, and streptomycin has been unsuccessful. Many authors agree that the focus should be opened and drained when pus is present or the roentgenograms reveal the presence of a sequestrum. In all other patients, roentgenotherapy and vitamin B_1 may be sufficient. The best treatment is prevention of the condition and, for this, adequate preoperative preparation including sterilization of the skin is necessary before all operations on the prostate. The author states that opening of the prevesical space should be avoided when Freyer's operation is performed, and Millin's operation should be limited to thin patients with clear urine and a low symphysis. The author reports on three patients in whom osteitis pubis developed following a two-stage prostatectomy according to Freyer. Large doses of vitamin B_1 and concurrent roentgenotherapy brought about recovery without causing side-effects. One patient with pyuria received antibiotics also.

OPHTHALMOLOGY

Topical Cortisone in Syphilitic Interstitial Keratitis: Review of 23 Cases (29 Eyes). G. O. Horne. Brit. J. Ven. Dis. **31:**9-24 (March) 1955 [London, England].

Of 23 patients between the ages of 5 and 44 years with syphilitic interstitial keratitis associated with congenital syphilis and treated with topical cortisone at the department of venereal diseases of the General Infirmary in Leeds, England, cortisone therapy was started during the first attack of interstitial keratitis

in 8. Ten patients had a previous attack of interstitial keratitis in one eye, and cortisone therapy was started during the first attack of the disease in the other eye. Cortisone therapy had been started in two patients at another hospital and was continued at Leeds; three patients were treated with cortisone for recurrence of previous attacks. Eighteen patients were admitted to hospital for treatment, and only five patients were treated entirely as outpatients. The preparation used almost exclusively was a suspension of cortisone acetate in sodium chloride solution (5 mg. per cubic centimeter). Hydrocortisone suspension (5 mg. per cubic centimeter), cortisone ointment (15 mg. per gram), and subconjunctival injections of cortisone (0.25 to 0.5 cc. of a 25 mg. per cubic centimeter suspension) were occasionally used. Inpatients during the acute stage received one drop in the affected eye or eyes at intervals of from one to four hours, depending mainly on the severity of the condition. Cortisone was sometimes stopped for a period before the patient was discharged from the hospital, sometimes it was stopped at the time of discharge but usually it was continued on an outpatient basis. Duration of treatment varied from six days to one year. The patients were kept under observation for periods ranging from 6 to 39 months after the start of the treatment. The results of treatment were as good as, or better than, those obtained by other workers who used similar methods of treatment. The best results were obtained in those patients who were admitted to the hospital for their initial treatment. The earlier in the course of the disease cortisone was started the more rapid were the relief of symptoms, the suppression of activity, and the restoration of normal vision. The later cortisone was started, however, the more dramatic were the results. Even in patients with extensive and dense infiltration of the cornea and with vision reduced to counting fingers, or less, the cornea cleared completely and vision was quickly restored to normal. One patient was initially given four subconjunctival injections at intervals of three to four days, but failed to improve until drops were started. The good immediate response occurred irrespective of whether the patients had received or were receiving penicillin, and of when they received penicillin in relation to cortisone. Since most of the patients were given shorter initial courses of cortisone than were used by other workers, a relatively high relapse rate might have been expected, but this did not occur. This suggests that a high initial dose may tend to shorten the attack. The results do not appear to have been influenced by systemic antisyphilitic therapy, except perhaps in relation to involvement of the second eye. If topical cortisone therapy is started soon after the onset of interstitial keratitis and is used in adequate dosage (one drop of cortisone suspension every two or three hours, and even every hour and "round the clock," if necessary, in severe cases) and over a long enough time, the patient will obtain prompt relief of symptoms, no permanent damage will be done to the eyes, and there will be no impairment of visual acuity. Even if cortisone is not started until the inflammation has been present for several weeks and dense infiltration and vascularization have occurred, the cornea can usually be cleared and vision restored to normal or near normal. Cortisone should be started as soon as possible and all patients should be admitted to a hospital immediately, in order that cortisone may be given under supervision. The patients should be kept in the hospital at least until all evidence of activity of the disease is controlled and until normal vision has been restored, though treatment can be given entirely on an outpatient basis if necessary. In contrast to the persisting reluctance to use cortisone in syphilitic interstitial keratitis, the author is convinced that topical cortisone is imperative in the treatment of this disease.

Oxygen Administration and Retrolental Fibroplasia. M. A. Engle, D. H. Baker, I. Baras and others. A. M. A. Am. J. Dis. Child. **89:**399-413 (April) 1955 [Chicago].

A study was undertaken in January, 1952 in the premature nursery of the New York Hospital to investigate the role of oxygen in the causation of retrolental fibroplasia. A comparison within three weight groups of the effects of curtailed versus prolonged oxygen administration was made on 94 premature infants with birth weights from 800 to 1,650 gm. No significant difference was found with respect to active or cicatricial retrolental fibroplasia between babies removed from oxygen at 2, 7, and 14 days with a 4-day weaning-out period and those in oxygen for three to four times as long, nor was there any difference in incidence among the babies at concentrations below 40%, 40 to 50%, and above 50%. The highest incidence of residual changes and blindness occurred in infants with the lowest birth weights, those with a gestational age of 29 to 30 weeks, and those in precarious condition in the early neonatal period. Other possible factors, such as transfusions, infusions, and antibiotics, that might have influenced the development of retrolental fibroplasia in these children were considered, and their relationship to retrolental fibroplasia was interpreted as only coincidental. Although in this study there was not a significant difference in incidence of retrolental fibroplasia among the babies in oxygen for curtailed or prolonged periods, oxygen exposure may nevertheless be related to the development of the disease. If so, then the role of oxygen administration as a cause of retrolental fibroplasia was masked in this particular study, probably because curtailment of oxygen administration was not drastic enough. It is important to know that retrolental fibroplasia does develop with considerable frequency in babies exposed to low or moderate concentrations of oxygen for 5 to 10 days.

Treatment of Retinoblastoma by Radiation and Triethylenemelamine. A. B. Reese, G. A. Hyman, G. R. Merriam Jr. and others. A. M. A. Arch. Ophth. **53:**505-513 (April) 1955 [Chicago].

Reese and associates have been treating retinoblastoma by a method of irradiation that they described in 1936. It employs special cones at temporal and nasal portals in an effort to deliver an adequate dose to the posterior sector of the eye, to the exclusion of the vulnerable anterior sector. The treatment is employed for patients with bilateral tumors whose eye with the more advanced disease has been enucleated. The less involved eye has been irradiated when it was thought that useful vision might be salvaged if the tumor could be arrested. Cataract has not been a problem with this treatment, since the irradiation largely avoids the lens. Late vitreous hemorrhages from retinal vessels presumably damaged by irradiation have caused great concern. Even after the radiation dose had been greatly reduced, the vitreous hemorrhages still occurred occasionally. When the authors learned that other investigators had obtained a remarkable regression with the use of radiation in combination with nitrogen mustard therapy, they reasoned that such treatment would permit further reduction in the x-ray dose. They resorted to triethylenemelamine (TEM) because its oral administration, in contrast to the intravenous administration of nitrogen mustard, is a distinct advantage for small children. They used the combination of irradiation and triethylenemelamine in 34 eyes. In 19 of the eyes the retinoblastoma showed satisfactory regression. In eight other eyes the lesions showed a good response in the beginning, but six to eight months following the completion of the treatment the tumors manifested active growth. Additional therapy to these eight eyes was instituted, and in three instances the lesion regressed satisfactorily. The authors point out that treatment with TEM alone did not prove curative in the treatment of any neoplasm in the past. Consequently, the use of TEM alone was not assayed in the present series. As a result of 21 months' experience with the treatment of retinoblastoma by a combination of radiation and triethylenemelamine, the authors feel that these two agents implement each other in such a synergistic manner that they offer the best method to date of treating this type of tumor.

THERAPEUTICS

Aerosol Therapy with Desoxyribonuclease Enzyme in Chronic Bronchial Conditions. G. Bertelli. Minerva med. **46:**415-418 (Feb. 14) 1955 (In Italian) [Turin, Italy].

Results are reported of aerosol therapy with desoxyribonuclease (Derinase) in three patients with chronic bronchitis and two with bronchiectasis. These two did not respond to previous therapies with common agents. From 10 to 15 mg. of the enzyme were given in two or three daily applications. There were no

toxic or anaphylactic reactions. This enzyme is specific for nonliving cells, and its action results in depolymerization of the nucleic acids arising from nuclear disintegration. Cytochemical studies of smears of the patients' sputum taken before, during, and after the therapy indicated that the enzyme had induced significant changes. The thick mass of fibrils made up of Feulgen-positive nucleic acids seen before the therapy appeared at first fragmented and disjointed and later disappeared, and the leukocytes were no longer enmeshed in the fibrils. At the end of the treatment very few thin and mostly Feulgen-negative fibrils were seen in some of the slides. These changes in the chemical composition of the sputum were accompanied by qualitative changes in its phases of transition from purulent and viscous to mucopurulent, mucous, and watery. Clinically, the patients with chronic bronchitis showed a prompt and complete response to the therapy. Of the two with bronchiectasis, one improved but was not cured, probably because the alterations in the bronchial pathways were already advanced and diffuse when the therapy was started. His sputum, at first purulent, became mucous. The second patient in whom the alterations in the bronchiolar walls were in the initial phase recovered completely. Bertelli believes that aerosol therapy with desoxyribonuclease is justified in patients in whom a dense, viscous, and purulent sputum obstructs the bronchial passages. The enzyme will liquefy the sputum and thus facilitate its discharge.

Chemotherapeutic Possibilities in Case of Failure of the Classic Tuberculostatics. J. Wanner and G. Kaufman. Schweiz. med. Wchnschr. **85:**339-344 (April 9) and 370-376 (April 16) 1955 (In German) [Basel, Switzerland].

In recent years several substances have been developed that, in case of clinical failure of the classic tuberculostatics, i. e., streptomycin, *p*-aminosalicylic acid and isoniazid, can be substituted for these drugs. The three most important of the new substances, namely oxytetracycline (Terramycin), viomycin (Viocin), and pyrazinamide (Aldinamide) are discussed on the basis of an extensive literature comprising 100 papers (most of them American) and of the authors' experiences in 49 patients with pulmonary tuberculosis. Oxytetracycline proved to be an excellent "basic drug." Although it is by itself only moderately tuberculostatic, it delays resistance in combination with other drugs. Oxytetracycline is a particularly suitable substitute for *p*-aminosalicylic acid. A daily dose of 1 to 2 gm. is recommended. Undesirable side-effects of combined treatment with oxytetracycline and streptomycin, the most valuable combination, are surprisingly mild. Viomycin tested in vitro, in animal experiments, and clinically, proved to be somewhat less effective than streptomycin, but its action otherwise is similar to that of streptomycin. Its administration is particularly indicated in streptomycin-resistant cases, but should be given only intermittently because of its toxicity. The recommended dose is 1 gm. twice intramuscularly on two days every week. Bacterial resistance against viomycin is rare; it is the only tuberculostatic that can be recommended for uncombined chemotherapy of pulmonary tuberculosis. Painful local indurations at the area of injection may limit the duration of therapy. Viomycin is contraindicated in patients with renal lesions. In contrast to most of the other tuberculostatics, pyrazinamide exerts an optimum effect in acid environment (caseous foci). The clinical effect of pyrazinamide exhausts itself within several weeks when the drug is given alone. Isolated administration, therefore, must be limited to phases of dissemination, and to preoperative and postoperative therapy. Combined with isoniazid, pyrazinamine is one of the best drugs that at present are available for the treatment of tuberculosis. The recommended dose is 3 gm. orally per day. The routine use of the drug may occasionally be contraindicated by hepatotoxic manifestations that require a strict control of the function of the liver.

Chloramphenicol in Treatment of Some Meningeal Syndromes. L. Bossi. Gior. med. mil. **105:**71-81 (Jan.-Feb.) 1955 (In Italian) [Rome, Italy].

Five patients with acute meningeal syndromes were successfully treated with chloramphenicol. The etiology of the condition could not be ascertained, but the cause was very likely of a viral or meningococcic nature. Except for one patient, the treatment was begun with the administration of 2 gm. of the drug in two hours, followed by 0.25 gm. every hour for six consecutive days almost uninterruptedly with the exception of brief interruptions during the night hours. The total dose administered to two patients was 21.75 and 24 gm. respectively. The other three received a total of 48, 40, and 32 gm. respectively. Chloramphenicol was given with sulfonamides to three patients, and two recovered completely within 4 days; the third recovered only after 30 days of therapy, probably because he received smaller doses. One patient in whom earlier administration of penicillin and streptomycin gave no results recovered after 7 days of therapy with chloramphenicol combined with streptomycin. In the fifth patient chloramphenicol combined with penicillin was efficacious. The therapy never caused side-effects so severe as to necessitate discontinuance of the therapy. The mucous membranes were not injured, and gastrointestinal symptoms, allergic manifestations, or acute cardiovascular insufficiency were not noted. Nor were marked peripheral blood alterations noted. A slight neutropenia with lymphocytosis was observed in one patient and a slight deviation in the number of erythrocytes in another. The small number of patients treated makes it impossible to draw definite conclusions on the use of chloramphenicol in the various types of acute meningitis, but the results obtained by the author are encouraging. With respect to the question of combining this antibiotic with others, Bossi emphasizes that no antagonism was observed in the two patients to whom chloramphenicol was given combined with penicillin and streptomycin.

PHYSIOLOGY

Characteristics of the Hibernating Heart. A. R. Dawe and P. R. Morrison. Am. Heart J. **49:**367-384 (March) 1955 [St. Louis].

Lowering of the body temperature of a mammal will eventually cause its heart to slow down and stop, usually at a temperature of 16 C (60.8 F). Hibernating animals, however, may have body temperatures as low as 0 C (32 F) and still show detectable heart contractions. The hibernating heart, therefore, probably presents the only condition under which the lowest temperature characteristics of the intact mammalian heart can be known physiologically. The hearts of hibernating hedgehogs, arctic ground squirrels, and Franklin ground squirrels were studied to determine the characteristics of the hibernating heart rate and of the electrocardiographic components observable within the dimensions of a single heart beat, with particular reference to body temperature. Data were obtained while the animals were going into hibernation, while they were in deep hibernation, and while they were coming out of hibernation, i. e., during arousal. Correlation of the heart rates during these periods with time and body temperature shows that (1) they are cyclic in periods of several days and (2) the function of the heart going into hibernation differs from that of the heart coming out of hibernation. The heart of an animal going into hibernation becomes hyperirritable at a temperature of about 20 C (68 F) and this hyperirritability precludes the heart standstill that would occur in most other mammals on cooling. Stabilization of the heart rate in deep hibernation at rates that may be as low as 2.2 beats a minute takes place at body temperatures that, though very low, are about 2 degrees (C) above the ambient temperature. Unusual patterns, such as pairing of beats or beats occurring in bursts, were observed on several occasions during deep hibernation. The heart rate rises before the body temperature in animals coming out of hibernation. The electrocardiograms taken when these hearts were beating slowly in deep hibernation showed stretching or extension of the normal electrocardiographic components in the following order: T-P, P-R, QRS, P, Q-T, and RS-T. The fact that the greatest lengthening appears in the T-P interval shows that the primary method by which the hibernating heart attains its low heart rate values is a decrease in the automaticity of the SA node. Complete heart block was not observed, but there was a marked slowing of the conduction time of the heart as shown by the lengthening of the P-R interval, occurring primarily at hibernating body temperatures below 10 C (50 F).

BOOK REVIEWS

Multiple Sclerosis. By Douglas McAlpine, M.D., F.R.C.P., Physician-in-charge of Department for Nervous Diseases, Middlesex Hospital, London, Nigel D. Compston, M.A., M.D., M.R.C.P., Assistant Physician, Royal Free Hospital and Hampstead General Hospital, London, and Charles E. Lumsden, M.D. Cloth. $7. Pp. 304, with 41 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; E. & S. Livingstone, Ltd., 16 and 17 Teviot Pl., Edinburgh 1, Scotland, 1955.

This monograph by a British neurologist, a general physician, and a pathologist, respectively, is an important survey of our present knowledge of multiple sclerosis and a distillation of the experience and opinions of the authors. After a brief but discriminating historical note, they discuss the curious and unexplained geographical distribution of the disease, the putative etiological factors, the complex symptomatology as observed in both clinic and laboratory, and the problems of diagnosis, prognosis, and treatment. Two excellent chapters present the pathology of multiple sclerosis and related demyelinating diseases in man and in animals with a discussion of recent experimental research into the nature of this baffling disease. The book closes with a refreshingly imaginative consideration of the problem of pathogenesis. It is well that a monograph of this type appears just now to summarize and bring into focus the overwhelming literature on multiple sclerosis, much of which is worthless. The value of such a summary depends on the wisdom and discrimination of the authors and their freedom from major bias. No group of neurologists in the world has had a greater opportunity than have the British to observe this disease in daily practice and in the laboratory, and none has been more faithful to the task. If this familiarity has led in some instances to an easy readiness to make the diagnosis on slender evidence, it has nevertheless often produced a sagacious insight that is impressive. With few exceptions, this work is distinguished for its balanced judgment and its fair distribution of emphasis. Certain specific features merit comment.

McAlpine presents his observation that the pattern in which paresthesias may advance in multiple sclerosis suggests that a plaque in the dorsal columns at the cervical level spreads by contiguity. This idea seems legitimate and, if confirmed by histological study, is quite important. Such confirmation, which is difficult to come by, is not yet at hand. In cataloguing etiological factors the authors appear strangely, even dangerously, credulous. To assert that excessive physical exertion may precipitate the first symptoms and even determine their site, without the faintest vestige of proof or credible rationale, is to fall into the ancient *post hoc, ergo propter hoc* fallacy. The same can be said for the idea, here solemnly presented, that "there would appear to be little doubt that trauma to a limb or any part of the body, slight or severe, including operation, may occasionally precipitate the disease in a predisposed person or may cause a relapse." It is further added that "the site of the trauma would appear to play a part in determining the localization of the initial symptoms." This strains one's credulity to the breaking point and, if read from an authoritative book in court by a plausible lawyer, could confound the processes of justice beyond repair. There is no person with multiple sclerosis who could not, if he wished, point to some trauma, slight or severe, as a precipitant. After this excursion into gullibility the authors resume a commendable skepticism and exculpate pregnancy as a precipitant on statistical grounds, but they pass blithely on to attribute onset or relapse to anxiety and emotional disturbance, concluding that "the history in some instances is so striking as to leave little doubt that emotion may influence the onset and course of the disease." Without indulging in dialectics, one may reject such etiological agents until some demonstrable mechanism is offered.

In discussing the symptomatology of multiple sclerosis the authors curiously minimize the importance of cerebellar disturbances, attributing many to vestibular origin. In view of the frequency with which the cerebellum is found at autopsy to be involved, this idea may be doubted. The chapter on changes in the spinal fluid is up-to-date, clear, and succinct. Recent work on electrophoresis and the gamma globulin content of the spinal fluid and blood plasma is well presented. Likewise, the course and prognosis of the disease are well treated, in accord with present opinion. The chapters on pathology, contributed by Lumsden, are most valuable and well illustrated by cuts, which, however, are unnecessarily repetitious in presenting gross pathological changes. The chapter on the pathogenesis of the disease contains the chief contribution of the book: the theory that the oligodendroglia, considered as serving the function of myelin formation in the central nervous system as do the Schwann cells in peripheral nerves, is primarily at fault in the demyelination of multiple sclerosis. Thus, multiple sclerosis would be due to a focal failure of remyelination by oligodendroglia that had been damaged, either by an endogenous enzymatic process or by some unidentified factor with a selective affinity for oligodendroglia. This theory, carefully labeled as such by the authors, is worth serious consideration. Not the least among the many virtues of this book are the clear diction, the easy style, and the well-chosen bibliography listing over 500 different authors. The index is complete and the typography and format handsome.

These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

Neurology. Volumes I-III. By S. A. Kinnier Wilson, M.A., M.D., D.Sc. Edited by A. Ninian Bruce, F.R.C.P., D.Sc., M.D., Consulting Physician, Bangour Mental Hospital and St. Andrew's Hospital, Hawick. Second edition. Cloth. $37.50. per set. Pp. 702; 703-1351; 1355-2060 [index, pp. 31; 22; 99]. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; [Butterworth & Co., Ltd., 88 Kingsway, London, W.C.2, England], 1955.

It has been 15 years since the first edition of this book became available, and neurologists have eagerly awaited the appearance of the second edition. This edition brings a nostalgic note to all who were trained in the early days of the first edition, as both editions are similar in many respects. The beautiful descriptions of the disease entities are, in a large part, duplicated in the second edition. This pertains particularly to the well-phrased descriptions of the diseases of the basal ganglia. American physicians, and neurologists in particular, will be disappointed in the fact that there is a lack of precision in much of the scientific data, even though the descriptions of the clinical entities remain as lucid as in the first edition. There is a failure to keep abreast of the times. This is particularly evident in the sphere of laboratory developments. Examples of this are found in the discussion of the spinal fluid in multiple sclerosis, the terms paretic and tabetic curves are still used, although these have long since been abandoned as imperfect terminology by most American neurologists, and there is no mention of the gamma globulin determinations in the spinal fluid of patients with multiple sclerosis. This deficiency can be noted in even larger areas: for example, 70 pages are set aside for the discussion of epilepsy and only 15 lines are given to the electroencephalograph.

Areas such as industrial toxicity are dealt with in almost listing fashion, even though this is becoming an important field in neurology. Equine encephalomyelitis is barely mentioned, yet in the United States this is a disease of great importance. The studies on prognosis are drawn largely from the original volume; for example, the figures of Bramwell for the prognosis in multiple sclerosis. These were based on 200 cases and derived in the year 1900. The vast studies made in the United States on the epidemiology and course of this disease were completely overlooked. Even in an area as important as poliomyelitis, there is a reference to the latest work on filtrates of the virus as having been done in 1931, and the electron microscope and tissue culture techniques are not mentioned.

Diagnostic techniques are minimized. For example, arteriography in the localization of cerebral aneurysms is touched on very briefly. The description of epilepsy is much the same as it

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was in the original volume; all of the work on psychomotor epilepsy is largely overlooked; and there is no reference to temporal lobe foci in psychomotor epilepsy nor in electroencephalography. The treatment of epilepsy is discussed as a sedative treatment, overlooking completely the research investigations toward better nonsedative anticonvulsants. The anticonvulsants are listed sometimes without even an indication of dosage and with little discussion of some of the complications. For example, there is no discussion of the toxicity of primidone, originally an English drug. Phenacemide, which was primarily developed for the treatment of psychomotor epilepsy, is recommended for myoclonic epilepsy and the dosage is given as three grams per day. The surgical treatment of epilepsy is discussed haphazardly. There is a long description of trephining and how limited in value it is and then discussion of the long since discarded work of excision of cervical sympathetic ganglia and carotid sinus denervation, while the great contributions of the surgical treatment of epilepsy are overlooked.

The illustrations are taken from the first edition, and there is still the question as to how much narcolepsy can be seen in a photograph. It might have been better here to have included a sketch from one of the earlier editions of "Pickwick Papers" showing the fat boy asleep. This textbook retains the lucid and full description of the clinical entities of the first edition but has failed to keep abreast of new developments. The bibliography lists very few papers written after the first edition went to press. While the bibliographic listings have some advantages over those in the first edition, they still fail to give the title of the article cited.

Peripheral Vascular Diseases: Diagnosis and Treatment. By William S. Collens, M.D., Chief of Clinic for Peripheral Vascular Diseases, Maimonides Hospital, Brooklyn, New York, and Nathan D. Wilensky, M.D., Attending Physician, Kings County Hospital, Brooklyn. Second edition. Cloth. $12. Pp. 622, with 226 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, Canada, 1953.

This book constitutes a comprehensive presentation of the clinical aspects of peripheral vascular diseases. Where the authors deem it helpful some experimental material is included. An initial chapter on the structure of the peripheral arterial pathways is followed by a classification of peripheral arterial disease and chapters on methods of examination, symptoms and signs of interference with arterial flow, important diseases of the arteries, neurovascular syndromes, general care and hygiene of the extremities, medical, physical, and surgical methods of treatment, various venous syndromes, lymphatic problems, and neoplastic conditions. The editors are to be commended for including sections on the use of chiropody and of prosthetic devices and on vascular diseases of the brain and spinal cord.

In a volume as comprehensive as this it is impossible to avoid taking positions that are not accepted by all other workers and presenting controversial views. For example, at one point it is stated that thromboangiitis obliterans is an infectious disease. If this were so, why do most open lesions heal and why does the condition remain quiescent after the elimination of tobacco? The section on surgery contains a detailed discussion of sympathectomies and amputations but little about blood vessel grafts and the use of blood vessel banks. The section on diathermy and short wave therapy fails to emphasize the serious risk involved in their general use by physicians and patients. Many cases of severe burns and gangrene have resulted from this type of therapy for patients with arterial disease. In commenting on the oscillating bed, it is stated that it accomplishes the same thing as Buerger's exercises, but the point is not made that Buerger's exercises can be carried out for only a relatively short period without fatigue, whereas the oscillating bed is capable of continuing therapy throughout each day.

The authors follow the school that holds to a distinct difference between phlebothrombosis and thrombophlebitis, the overemphasis of which has deluded some physicians into underestimating the risk of serious emboli from thrombophlebitis with localized inflammatory responses. Elsewhere it is stated that anticoagulant therapy should be reserved only for patients in whom it is suspected that propagating thrombosis may be taking place. A physician who follows this dictum will deprive his patients of many opportunities to gain maximum benefits in terms of prevention of emboli and propagation of thrombi and in encouraging rapid dissolution of thrombi already formed. Elsewhere it is stated that venous ligation should be performed immediately in every patient in whom a pulmonary infarction has already taken place. This approach has been generally superseded by the more active use of anticoagulant therapy. There is a chapter on the use of intermittent venous occlusion that holds to the original position of the authors, although generally this form of therapy has not found widespread acceptance. In spite of the controversial material that may be found in this volume, it represents a marked improvement over the first edition. It should be useful in conjunction with other published material in its field.

X-Ray Atlas and Manual of Esophagus, Stomach and Duodenum. By Dr. T. J. J. H. Meuwissen, Consulting Physician and Radiologist at Eindhoven, The Netherlands. With introduction by Robert D. Moreton, M.D., F.A.C.R., Radiologist at Fort Worth, Texas. Edited by Dr. G. C. F. Brinkbok, Radiologist at Amsterdam. Translated by May Hollander. Cloth. $25. Pp 687, with 1201 illustrations. Elsevier Press, Inc., 402 Lovett Blvd., Houston 6; 155 E. 82nd St., New York 28; 110-112 Spuistraat, Amsterdam C, The Netherlands; Cleaver-Hume Press, Ltd., 31 Wright's Lane, Kensington, London, W.8, England, 1955.

This is a most extraordinary and comprehensive atlas. There are three major sections dealing respectively with the esophagus, stomach, and duodenum and an appendix dealing with the postoperative stomach. Each section contains an introduction in which the normal anatomy, the methods of examination, and a brief outline of the pathology to be exhibited are delineated in didactic fashion. This material is brief but generally accurate. The remainder of each section is composed of case presentations that illustrate various abnormalities and are profusely illustrated by beautifully reproduced roentgenograms. Although no book can take the place of experience and personal study, as a reference this book is extremely valuable. Only minor criticisms may be made. Many of the cases are repetitious, thus needlessly increasing the size of the book. In a few instances there might be disagreement as to the diagnosis, e. g., figure 33, case 14, is really a case of situs inversus rather than a simple right-sided aortic arch. The author's designation of the cauliflower type of carcinoma of the stomach as the commonest form might be questioned, and it is surprising that superficial spreading carcinoma of the stomach is omitted. Some of the cases called benign gastric ulcer seem doubtful and might better have been omitted, since there is no microscopic confirmation. The author uses the term "duodenitis" more freely than we would in the United States and assigns symptoms to diverticula of the duodenum more often than do we. The detailed studies of the esophagus, such as the illustrations of webs, small diverticula, and varices are excellent. Likewise, the detailed studies of the mucosa of the stomach, especially those related to gastric ulcer, are superb. There is an excellent demonstration of anomalies and variations of the duodenum. As a study book for gastroenterologists and radiologists interested in the roentgen appearances of lesions of the upper digestive tract, this manual is highly recommended.

Health in the Elementary School: The Role of the Classroom Teacher. By Herbert Walker, Professor of Health Education, Teachers College, Columbia University, New York. Cloth. $4. Pp. 228, with 16 illustrations. Ronald Press Co., 15 E. 26th St., New York 10, 1955.

The elementary classroom teacher, during the hours she spends in school each day, exerts a vital influence on the health of her pupils. Unlike many books that attempt to cover the whole gamut of school health this volume is written primarily for such teachers. The teacher's role in health instruction, her responsibility in referral of children through their parents for medical care, and her relationship to public health programs such as communicable disease control is stressed. Particular attention is given to the teacher's place in safety education, in emergency care, and in the guidance of individual children. Problems in vision and hearing conservation, mental health, physical education, and evaluation receive special consideration. The author has carefully delineated the teacher's place in school health in relation to that of the parent, the physician, the nurse, the dentist, and others involved. The book should be helpful as a reference for teachers in service as well as a textbook for use in teacher education institutions.

QUERIES AND MINOR NOTES

AEROTITIS

To the Editor:—*A man, while flying over mountains, felt a "popping" in his ears. On landing he had pain, tinnitus, and feeling of block, which persisted for weeks in the right ear and partially in the left ear. The case finally cleared up under treatment. The discharge diagnosis was as follows: serous aerotitis following flight, and tinnitus in both ears and hearing loss, mixed type, 40% right ear, 38% left ear. I was not aware that aerotitis produced permanent disability. In a large general practice I see few cases of aerotitis, while in military service I saw numerous cases but do not remember any that produced permanent loss of hearing.*

James N. Dewane, M.D., Evanston, Ill.

Answer.—The patient referred to gives the usual history in most cases of aerotitis. The physiology of this disease is rather simple but still frequently misunderstood. After the patient has been at a high altitude for a time the barometric pressure in the middle ear becomes the same as the ambient pressure found in the airplane cabin. When the airplane lands the barometric pressure is naturally increased to that of ground level, and if the patient cannot ventilate the eustachian tubes a negative pressure will cause intense pain in the middle ear and a resultant transudate if the condition is not treated at once. The transudate will thus decrease the negative pressure in the middle ear cavity causing lessening of pain but also producing deafness, sensation of fulness, tinnitus, and frequent sensations of "popping and slushing." The treatment in this stage is to remove the fluid from the middle ear cavity and to treat the eustachian tube so that a free exchange of air from the nasopharynx to the middle ear can be accomplished in a normal manner. If this treatment is not carried out a condition termed "chronic aerotitis media" results, which will give a conductive loss of hearing until the fluid is removed. Cases of this nature have been reported where a conductive deafness has been allowed to remain for several years until the condition was recognized and the fluid removed. The removal of fluid from the middle ear cavity will usually give miraculous improvements in hearing. The case in question was thought to have a mixed type of deafness. This would be interpreted as having some loss of hearing due to a perceptive lesion as well as a conductive lesion. The conductive lesion has been discussed in the above paragraphs. The perceptive lesion is common to all individuals with increasing age. This perceptive deafness, no doubt, was present before the individual received the barometric trauma to the middle ear cavities. For best results in treating these conditions the patient should be referred to a qualified otolaryngologist who is cognizant of the above-mentioned facts and sees these patients frequently in his daily practice.

CONSTANT BACKACHE

To the Editor:—*A woman, aged 38, married, had a tubal pregnancy at age 33. Otherwise her health has been good, with the exception of backache, which is more or less constant. X-ray of the spine showed two compressed disks in the lumbosacral region. A surgeon advised an operation, but the patient objects. Is there any treatment, like physical therapy, that would benefit the condition? This patient is a hard-working woman doing man's work on a farm most of her time.*

Anna H. McClung, M.D., Pattonsburg, Mo.

Answer.—It would appear from the description that this patient has simply degenerative disk disease without evidence of "slipped disk" (herniation of nucleus pulposus). There is no mention of pain on coughing or sneezing and there is no mention of secondary sciatic pain extending down either leg to the calf muscles, as is usually the case with a "slipped disk." A large proportion of patients having degeneration of the lumbar disks can be helped by the use of conservative measures that should include daily applications of radiant heat for about 30 minutes, followed by massage and postural exercises. After two or three professional treatments, preferably by a trained physical therapist, working under the supervision of a physician, the patient and her family could be trained to continue the treatment at home. Each night before retiring, heat should be applied by means of a simple homemade baker and the heating should be followed by sedative massage to the muscles of the back, which is given by a member of the family who has been instructed by the physician or therapist. Moderate postural exercises to correct any muscular imbalance should then be followed. The patient may be given a supporting belt that should be worn whenever heavy work is being done but should not be worn at night. She should be instructed to avoid heavy lifting with the back in a flexed position and she should be taught that whenever she lifts any heavy object, she should keep the lower back straight and do her lifting from the squat position, lifting the weight by straightening the flexed legs rather than by straightening the flexed back. Daily applications of heat, massage, and exercise should be continued for a period of four to six weeks, and then the treatments may be given on alternate days for a few weeks more.

FRACTURE OF CAPITELLUM OF HUMERUS

To the Editor:—*A 7-year-old boy fell on his right elbow, sustaining a simple fracture-dislocation of the capitellum of the humerus. After manipulation, a satisfactory, nearly anatomic, position was obtained. X-rays of the opposite elbow were taken for comparison. The arm was immobilized in a long arm plaster-of-Paris cast with the elbow in slight flexion (about 135 degrees), in which position it has been for two weeks. X-rays taken through the cast continue to show good position. Textbooks are brief in their discussion of treatment. What is the consensus of correct treatment of this injury, both in children and adults?*

M.D., California.

Answer.—Fracture of the capitellum of the humerus, particularly in children, is not rare, and it is one of the important traumatic lesions occurring about the elbow in both the child and the adult. The procedure of x-raying the opposite elbow for comparison is a good one and should always be carried out in those injuries that involve the growth centers of the long bones. After satisfactory reduction of the fracture of the capitellum, the angle at which the elbow will be immobilized must be chosen on the basis of each individual case, as the degree of displacement will vary, and, in one instance, it will tend to remain secure at one angle and in another instance tend to displace at the same angle. It should not be immobilized in complete extension, however, as the brachial radialis muscle attached directly to the fragment has a tendency to rotate the fragment forward at its upper end in this position. In the child, closed reduction and fixation at a satisfactory angle is the method of choice whenever possible. If the fragment is completely displaced in the joint, then an open reduction will have to be done. In children, this open reduction and internal fixation must be done with great care, and the fragment must be held by sutures rather than by transfixion with pins of one kind or another. Under no circumstances should the capitellum be removed in children, for, if it is, the lateral epiphysial elements will not grow and a deforming increase in the carrying angle of the elbow will result as time goes on. In the adult, if it is possible to replace the fragment, it may be held by a transfixion pin; however, frequently in the adult substantial displacement is present and the fragment may represent principally articular cartilage with only

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

a shell of subchondral bone. It is permissible under these circumstances to remove the capitellum in the adult, as frequently it becomes necrotic. In both children and adults, early motion is desirable, and the prognosis should be guarded until it can be determined that no excessive callus will block the joint and no myositis ossificans will develop in the brachialis anticus muscle.

STREPTOMYCIN

TO THE EDITOR:—*Please give information regarding the prolonged or overuse of dihydrostreptomycin. Is it possible to have, in addition to or without auditory nerve damage, marked ataxia or symptoms of cerebellar disease and also marked psychological disturbances?*

S. F. Pfohl, M.D., Winston-Salem, N. C.

ANSWER.—Many patients receiving the streptomycins for prolonged periods experience unpleasant reactions on the days that the drug is administered. Among commonly noted symptoms are circumoral paresthesias, lassitude and a drunk or "hangover" feeling, vertigo and ataxia, and headache and difficulty in visual accommodation. The symptoms usually begin within one to two hours after injection and persist for 1 to 24 hours. Their origin has not been definitely established. The vertigo, ataxia, and paresthesias may represent a mild form of the more severe neurotoxicity of streptomycin such as may follow intrathecally given streptomycin or large doses of streptomycin. In patients who experience severe reactions, alleviation of the symptoms is often obtained if the streptomycin injection is given shortly before the patient retires for the night.

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URIC ACID CRYSTALS IN URINE

TO THE EDITOR:—*What is the significance of large amounts of uric acid crystals in the urine of an adult? At times the urine is so red it resembles hematuria. The serum uric acid is normal. There is no evidence of gout and no evidence of renal calculi.*

M.D., Alabama.

ANSWER.—Uric acid crystals in urine are only important when found in freshly voided specimens. All acid urines on standing will precipitate uric acid or amorphous urates, especially if the person is on a high purine diet. The excretion of uric acid is also increased by muscular exercise. An increase in the excretion of uric acid may be found in leukemia, in polycythemia vera, during absorption of exudates, in liver cell destruction, in acute fever, and during x-ray therapy.

DIGITALIZATION

TO THE EDITOR:—*When administering daily dosages of digitoxin (0.1 mg.) over a prolonged period, is it sound to advise the patient to omit taking the medication one day out of every week, in order to prevent digitalis toxicity? In the rural area where I practice my patients fail to keep regular office appointments. A certain patient on digitalis might only be seen once every two or three months, if he thinks he is doing well. Is it safe to allow these patients to go unsupervised over such lengths of time?*

John F. Noguera, M.D., Praco, Ala.

ANSWER.—Most individuals vary in the dose necessary for digitalization and for its maintenance. After digitalization and observation for several weeks it should be possible to determine the daily maintenance dose that will secure the maximum benefit desired from digitalis without producing toxic effects. It is safe after this daily maintenance dose has been determined to allow the patient to continue on it indefinitely, unless the patient should lose considerable weight and, as a result, concentration of digitalis develops, which may produce toxic symptoms such as nausea or an irregularity of the heart beat and pulse rate. Specifically, the answer is yes if the patient is told to look for the above symptoms of overdigitalization.

CHRONIC TRACHEOBRONCHITIS

TO THE EDITOR:—*A 35-year-old man when seen in May, 1954, gave a history of marked upper anterior chest pain for six months and increasing inability to carry on as manager of a division of a large automobile firm. He had a rather unproductive chronic cough, but in the morning he brought up a small amount of sputum, which very occasionally was streaked with blood. He had no history of exposure to tuberculosis, and tuberculin tests were said to have been negative. He had taken antibiotics without relief. Another physician had seen ulcerations in the trachea. The patient's history indicates he had a spontaneous pneumothorax on the right side 10 years ago that was resolved without difficulty. A preliminary chest film disclosed no evidence of pulmonary or pleural disease. The diaphragm was unusually low and flat and the lungs appeared moderately emphysematous. The transverse cardiac diameter was subnormal, the heart assuming a vertical position. The barium swallow disclosed no disturbance in the mechanism of swallowing and no abnormalities of the esophagus. The lateral projection of the cervical soft tissues revealed nothing abnormal. The patient submitted to a bronchoscopic examination May 27, 1954, when the extrinsic larynx appeared normal. The cords moved well; however, immediately below the cords and covering the entire tracheal wall down to the carina and for a distance of 2 cm. in each major bronchus was a diffuse ulcerative membranous inflammatory process that resulted in the mucosa having a "chewed-out" appearance similar to that seen when kernels of corn have been chewed off a cob. Around the ulcerated areas were small flecks of yellow exudate and membrane. The carina was sharp and well defined. The remaining bronchial mucosa was erythematous, but there was no evidence of ulceration or neoplasia distal to the involved portions. Direct smears, curettage, and washings of the affected areas were done. The microscope revealed no malignant cells but marked acute and chronic inflammation with squamous metaplasia. Direct smears on both sides revealed gram-negative rods, and cultures showed a pure growth of proteus. Sensitivity tests show this organism was sensitive to Chloromycetin and Dihydrostreptomycin; not sensitive to Aureomycin, Bacitracin, Erythromycin, Magnamycin, and Terramycin; and very slightly sensitive to penicillin. The patient was treated with Chloromycetin, 250 mg. every 6 hours; Dihydrostreptomycin, 0.5 gm. intramuscularly every 12 hours; and penicillin, 1 million units daily in three divided doses using a preliminary Neosynephrine and oxygen aerosol. Tryptal aerosol was used in two occasions to remove any membranous debris. Following 10 days of therapy the trachea appeared much improved by mirror examination and direct laryngoscopy. The patient was then discharged on a regimen of continued Chloromycetin therapy. In following up the patient and for four subsequent bronchoscopic examinations this condition was slightly alleviated but it continued. A vaccine of the Proteus organism was made and used intracutaneously with some improvement. Bronchograms revealed no bronchiectasis. On Jan. 21, 1955, another bronchoscopy revealed thickened erythematous stippled mucous membrane with scattered ulcerations, but the cultures revealed Pseudomonas aeruginosa. The patient was given a 10 day course of therapy with Neomycin, 0.8 gm. daily in four divided doses (patient's weight, 112 lb. [50.8 kg.]) with careful attention to his auditory nerves by audiograms and careful urinary studies. He still has pain in the throat and right side of the chest, and a course of therapy with Pseudomonas autogenous vaccine has been started. Is there any further treatment that should be given in this case?*

C. Burling Roesch, M.D., Jacksonville, Fla.

ANSWER.—The finding of a chronic, diffuse, ulcerating, membranous tracheobronchitis, resistant to antibiotic therapy and unassociated with a pulmonary infiltration on chest x-ray, presents a rather unusual and interesting clinical problem. Of utmost importance is a definitive diagnosis. The gross appearance of the mucosa and the histological description of material obtained from the trachea by curettage is that of a chronic inflammatory lesion with squamous metaplasia and is strongly suggestive of a granuloma. Tertiary syphilis, tuberculosis, amyloido-

sis, and the pathogenic fungi must be considered as possible causative factors. Rhinoscleroma should also be ruled out, although the tracheal lesions are usually nodular and the histology specific. Thus, blood serology, acid-fast studies, routine skin tests, and sputum cultures on Sabouraud's medium may be of assistance in establishing a causative diagnosis. A repeat biopsy should be done, and specimens should be obtained from several representative sites. Culture of these specimens on Sabouraud's medium and staining by the periodic-acid method (Schiff) may demonstrate pathogenic fungi where routine methods of examination may fail. The culture of Proteus and P. aeruginosa may be of causal significance, but these organisms are usually found in association with some other more fundamental process, especially after prolonged antibiotic therapy, and their presence demands specific therapy. Polymyxin B and Streptomycin in combination would appear to be the antibiotics of choice. Polymyxin B is soluble in water and isotonic sodium chloride solution and might be effective by aerosol in a concentration of 1.0 to 2.5 mg. per cubic centimeter with less danger of systemic toxicity than with parenteral use. Vitamin supplements and an atmosphere of high humidity are general supportive measures of established value in tracheobronchial disease.

TRANSURETHRAL RESECTION AND HERNIATED FAT PADS IN WOMEN

To the Editor:—*Kindly discuss the indications for transurethral resection of bladder neck polyps in the female and operations on "herniated fat pads" in the lumbosacral region. I have been impressed by the frequency with which these operations (both beyond the scope of the tissue committee) are being done.*

M.D., Texas.

Answer.—Both of these queries deal with somewhat controversial subjects, so that no arbitrary reply can be made. Transurethral resection of the bladder neck for a number of pathological conditions, chiefly of obstructive nature, seems to have become an accepted procedure in a limited group of cases, including an occasional polyp, if one may judge from a number of recent publications on this subject. Two such papers have appeared within the past few months (Mathé, C. P.: Vesical Neck Obstruction in the Female, *J. Internat. Coll. Surgeons* **21:**146, 1954. Hock, E. F.: Vesical Neck Obstruction in the Female: Etiology and Treatment, *J. Urol.* **72:**657, 1954). Vesical obstruction with residual urine appears to be the indication. Most authors, however, warn that such operations are often unsuccessful and that they are not without such hazards as the production of urethrovaginal fistulas. As to the "herniated fat pads" in the lumbosacral region, reference is quite surely made to the very small lipoma-like nodules found over the sacroiliac joints of a good many women. While there are a few surgeons who think that they are responsible for sacroiliac pain, the majority of clinicians advise no active treatment, feeling that they have nothing to do with any sacroiliac pain that the patient may have. It is possible that there may be an occasional exception if the nodules themselves are extremely sensitive.

SLEEPING TABLETS AND BASAL METABOLIC RATE

To the Editor:—*Would any type of "sleeping tablet" affect a basal metabolism test? A patient came for the test and it was found too low to compute. She stated that the night before her appointment she had taken a "sleeping tablet."*

Louis L. Sherman, M.D., Oakland, Calif.

Answer.—The basal metabolic rate is determined according to standards that require the patient to have no food for at least 14 hours before the test and that the patient be at complete rest and comfortable, but that he be normally awake and alert. The sleeping metabolic rate is lower than the metabolic rate when the patient is awake. Likewise the metabolic rate of patients under the influence of sedatives or hypnotics is lowered. The usually used hypnotic doses of barbiturate drugs, for example, will depress the morning fasting metabolic rate in the awakened state to about −15%. Larger doses may depress the rate to −20% or more. If the patient dozes off during the test and is not fully awake, rates of −20 to −25 are not uncommon. Surveys in hospitals, where it is rather customary to administer some sleeping tablet to patients at bedtime, have revealed that the basal metabolic rates determined on such patients are below the usually accepted standards for normal. In one survey of some 500 such cases the average metabolic rate was −9%. Frequently patients with hyperthyroidism are given sedatives because of their tendency toward nervousness and insomnia. If they are given sedatives during the day and a hypnotic medicament at night, the effect on the so-called basal metabolic rate must be kept in mind. A true basal metabolic rate on such a hyperthyroid patient would probably be 10 or 15% higher than one obtained under the influence of such medication.

ABRASIONS OF HANDS

To the Editor:—*A patient's hands abrade and scratch very readily. Blood tests were all normal, and there is no diabetes in the family. What are the likely causes, and can you recommend treatment? The patient is a 40-year-old salesman who does not use his hands in his occupation. There have been no past surgical or medical ailments. His father died of cancer of the stomach at 65 years of age, and his mother died of a hypertensive stroke at 63. Onset of his hands scratching and abrading was three years ago. His skin is of a normal texture. He smokes about 40 cigarettes and drinks three cups of coffee daily.*

A. J. Allegretti, M.D., Cheyenne, Wyo.

Answer.—Unfortunately, the description given in the query is insufficient to establish a diagnosis of the exact nature of the difficulty. It is possible that the condition may be a retarded manifestation of a rudimentary form of epidermolysis bullosa. In this condition there is no known curative agent, and the best way to obviate the lesions is to teach the patient how to protect the hands or other affected areas from unnecessary trauma. It is necessary, however, to consider the possibility of other causes, such as a form of porphyria of the chronic type. Examinations of the urine for porphyrin would be advisable, as would tests of liver function. In view of the difficulty of establishing the diagnosis of such eruptions of the hands, it would be advisable for the patient to see a skin specialist. The multiplicity of the causes and kinds of skin eruptions on the hands is discussed in detail in the introductory article of the "Year Book of Dermatology and Syphilology" for 1948 (Chicago, Year Book Publishers, 1949).

CARDIAC EMERGENCY

To the Editor:—*While examining a boy for measles on March 20, I was called into the next apartment to attend a 58-year-old woman who was not breathing, was cold and clammy, and was without any pulse beat, heartbeat, and blood pressure. As she was not my patient, I did not know her cardiac status. I injected morphine sulfate ¼ grain (15 mg.) and atropine sulfate 1/150 grain (0.4 mg.) intravenously about 10 minutes after onset of attack. The response was dramatic. The pulse became palpable, the heart sounds were 30 per minute, and the blood pressure 40/000 mm. Hg. On arrival of the ambulance the blood pressure was 60/000 mm. Hg. Electrocardiogram revealed 2:1 arterioventricular block. The patient is now out of oxygen, responding well to atropine sulfate 1/150 grain (0.4 mg.) daily by mouth. Is morphine sulfate with atropine sulfate given intravenously really contraindicated? Should it be used more often in emergencies of this kind in hospitals by interns and residents? Have any other physicians had a similar experience?*

Fritz F. Adler, M.D., Paterson, N. J.

Answer.—From the data presented it is impossible to establish the mechanism responsible for the syncope in this case and hence to state whether the medication employed was indicated, contraindicated, or noncontributory to the recovery of the patient. There is no principal objection to the intravenous use of morphine in combination with atropine. In fact it is commonly employed in the management of acute pulmonary edema and in severe pain of gastrointestinal or cardiac origin. It would, however, appear hazardous and contrary to the rationale of medical therapy to recommend its indiscriminate use as standard therapy in cardiac emergencies of unknown etiology.